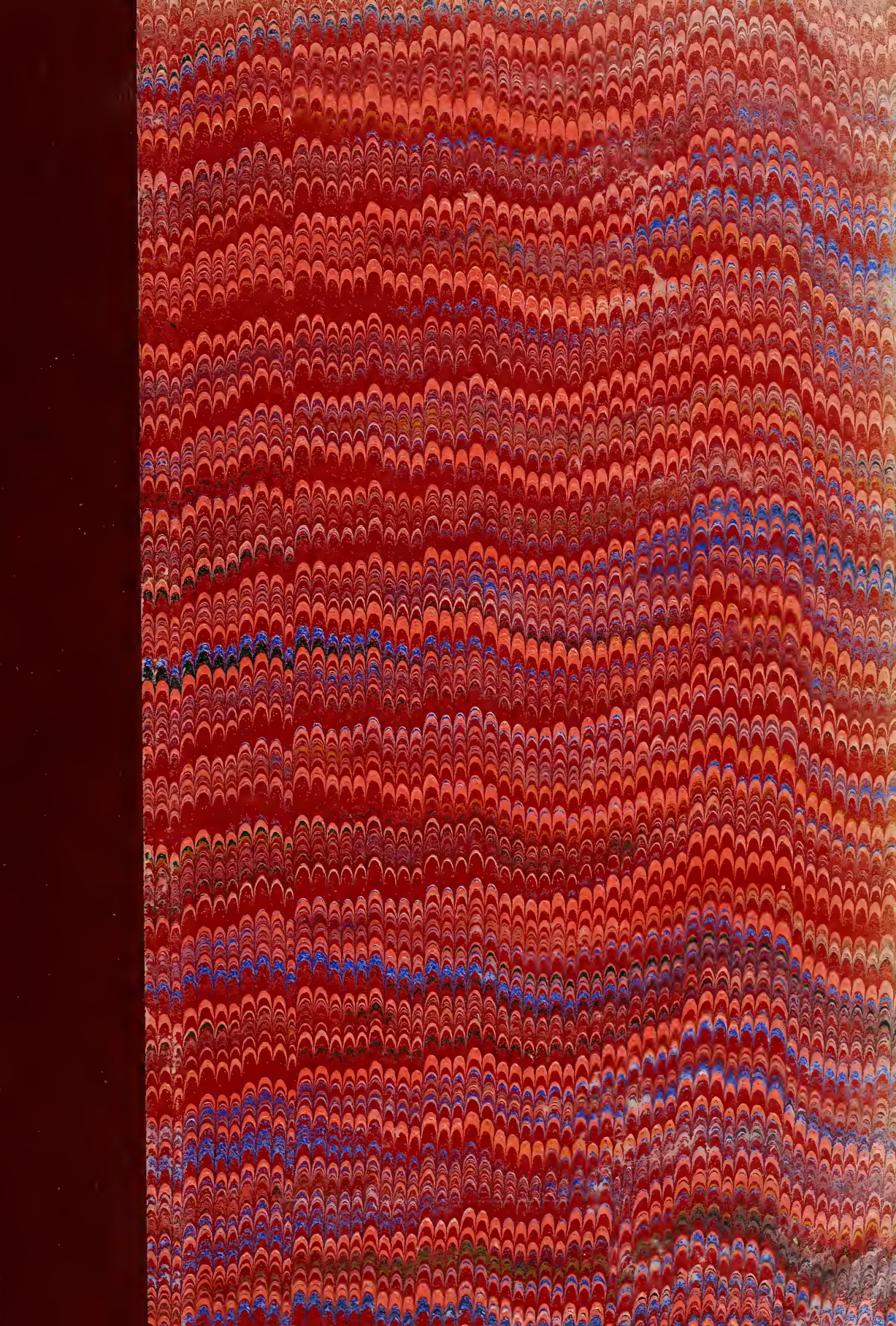




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MEMOIRS

ON THE

COLEOPTERA

BY

THOS. L. CASEY

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I—DESCRIPTIVE CATALOGUE OF THE AMERICAN BYRRHIDÆ.

The Byrrhidae, in the most modern arrangement of the Coleoptera, are held to form a part of a subordinal group called the Dascilloidea and are connected on the one hand, by way of the evidently related Dermestidae, with *Cyphon* and the Heteroceridae and on the other, through the Rhipiceridae and Cebrionidae, with the large families Elateridae and Buprestidae and finally with the Ptinidae, leading thence into the Heteromera. This appears to be one of the happiest strokes among the many efforts to arrive at a true generalization of affinities among the very puzzling groups, some clavicorn and some serricorn, of the old arrangement. Years ago (Journ. N. Y. Ent. Soc., VI, 1898, p. 76) the writer alluded to the fact that the Clavicornia of the old school were by no means a natural aggregate, and it is with satisfaction that he finds this opinion is being corroborated, though he was in all probability by no means the first to offer the suggestion.

In the following revision the Byrrhidae of LeConte and Horn are restricted to the series comprising the subfamilies Byrrhinae and Nosodendrinae of those authors, the genus *Chelonarium*, which formed another subfamily under their conception of the Byrrhidae, having rather family than subfamily rank, being excluded from the present discussion. *Chelonarium* seems to be very rare in this country, but is more frequently met with in the warmer parts of the continent. It is said to be arboreal in habits and not epigeal, differing in this way as well as profoundly in structure from the Byrrhidae proper.

The general anatomy of the Byrrhids is outlined with sufficient clearness in many comprehensive systematic works and need not be repeated here. The body is oval in form and very convex, of minute to moderate size and with hard integument. The Byrrhids are rather numerous in species, occurring under stones and logs, or more especially in the crevices between aggregated fragments or in sand near water courses; they are rather slow in movement,

T. L. Casey, Mem. Col. III, Feb. 1912.

generally closely retracting their legs and feigning death when disturbed like *Anthrenus* and other Dermestids, as well as *Cænocara* and some other Ptinids. They are essentially boreal in habitat, though a few more minute forms, belonging almost exclusively to the Limnichinæ, extend the range of the family well into the tropics. They are evidently more numerous and structurally more diversified in North America than in the palæarctic provinces, the very aberrant forms having unretractile legs apparently being altogether wanting in the latter regions. As occurring north of the Mexican boundary in North America, they may be resolved into four sub-family groups by the following primary characters:

- Mentum very large, filling the entire buccal opening; legs closely retractile; antennæ sheltered in repose beneath the anterior legs as in the Byrrhinæ; clypeal suture obliterated completely. Palæarctic and nearctic.....NOSODENDRINÆ
- Mentum small or moderate in size.....2
- 2—Legs closely retractile. 3
- Legs perfectly free; clypeal suture wholly obliterated.....4
- 3—Antennæ sheltered in repose beneath the anterior legs; clypeal suture obsolete. Palæarctic and nearctic. BYRRHINÆ
- Antennæ in repose exposed along the sides of the front above the eyes or sheltered between the eyes and anterior part of the pronotum, rarely lodged partially in pronotal excavations; clypeal suture generally distinct, rarely obsolete; mandibles concealed in repose; body more or less minute in size, the crural excavations deep and sharply defined; last two ventral sutures stronger than the first two, arcuate. Palæarctic and nearctic to neotropical.
- LIMNICHINÆ
- 4—Antennæ in repose wholly exposed along the under surface, sometimes very long and subfiliform; surface very convex and shining, the elytra sometimes substrate. Nearctic.....AMPHICYRTINÆ

Nosodendron is considered the type of a separate family in the most recent European arrangement of the Coleoptera, but in its anatomical characters it agrees so closely with the true Byrrhids, that its very large mentum should seemingly be held to have much the same relative weight as the large mentum of *Tentyria* and allies has when compared with the smaller mentum of the majority of the Tenebrionidæ. It would be far more rational to consider *Amphicyrta* as typifying a distinct family than it would to place *Nosodendron* in this category, but the number of groups having full family rank could easily be increased unduly.

The prefixed asterisks in the various tables indicate exotic genera introduced for comparison.

Subfamily NOSODENDRINÆ.

Widely extended in distribution over the palaearctic provinces and most of North America, the number of species is surprisingly small, showing that this is probably the oldest type of the Byrrhidae considered geologically; the species are however moderately numerous in Mexico; they all belong to a single genus.

Nosodendron Latr.

The body in this genus is broadly oval or oblong-oval and is not quite so convex as in the other subfamilies of the Byrrhidae. The species are more or less shining in lustre, strongly, subevenly punctate and deep black in color; the elytra have no trace of striation. Our only two known species may be defined as follows:

Form oblong-oval, evenly convex, strongly shining, deep black, the tarsi slightly piceous, the antennæ ferruginous, short, slender, with a broad and very abrupt club of three subequal transverse joints, the last rounded at tip; head wider than long, strongly parabolic in outline, the eyes basal, well developed; prothorax two and three-fourths times as wide as long, the sides strongly, evenly converging from base to apex, evenly and very feebly arcuate, the base broadly and distinctly arcuate, the apex more feebly sinuate; surface strongly, sparsely punctate, more closely and coarsely toward the sides; scutellum acutely triangular, well developed, a little longer than wide; elytra about a fifth longer than wide, slightly widest before the middle, very little wider than the prothorax, very obtuse at apex, the punctures strong, well separated, becoming decidedly coarse but only a little closer laterally, each with a short erect and squamiform parallel seta, more especially visible and sublinear in arrangement apically; sterna coarsely but not densely punctate; abdomen finely, sparsely and unevenly so, very convex narrowly along the middle, the sutures very coarse and deep, strongly arcuate medially, becoming straight and transverse laterally, the excavation for the tibiæ deep and extending obliquely almost across the second segment, with a lateral oblique connecting channel for the tarsi extending entirely through the second segment; legs short and very stout, the tarsi short and notably slender, simple. Length 4.7–5.2 mm.; width 2.7–3.0 mm. Northern Illinois and Kansas. [*Nosodendron unicolor* Say,—Long's Exped., 1824, Vol. 2, p. 274].

unicolor Say

Form slightly more narrowly oval, rather less deep black and notably less shining, similarly but more coarsely and notably more densely punctate above; elytral setæ not solitary as in the preceding but aggregated into small fulvous clusters, especially visible toward the sides and apex and by oblique illumination; under surface opaque, the sterna deeply but rather sparsely punctate, the abdomen



finely, sparsely and unevenly; abdomen and the deep groove-like sutures nearly as in *unicolor*, the oblique depressions for the hind tibiæ much shallower and less abruptly limited but almost similar in extent, the fine grooves for the tarsi wanting; legs nearly as in *unicolor* but piceous in color, the antennæ similar but piceous, with the club alone ferruginous. Length 4.6–5.0 mm., width 2.6–2.9 mm. California (Placer and Siskiyou Cos.). [*Nosodendron californicum* Horn,—Tr. Am. Ent. Soc., 1874, p. 22]. **californicum** Horn

The mesosternum is nearly as in the Byrrhinæ, except that the median apical notch receiving the tip of the prosternum, is much smaller and more angulate and the prosternum narrower and more attenuate posteriorly; the facets of the eyes are almost perfectly flat and defined only by a reticulation of very fine feeble lines. The general surface of the elytra under high power is seen to be closely, excessively minutely and evenly punctulate, the corresponding surface of the pronotum being finely and feebly reticulate in unevenly wavy lines.

The formation of the abdomen, and particularly the deep coarse groove-like sutures, is very remarkable and significant, because differences in the form of the abdominal sutures are valuable taxonomic characters in separating genera in the tribe Pedilophorini of the Byrrhinæ, and also since abdominal sculpture constitutes a prominent point of difference between *Byrrhus* and the closely allied *Cytilus*. *Unicolor* Say, is said by Dr. Sharp to belong to the suppressed *Dendrodipnis* Woll., while *californicum* is a true *Nosodendron*.

Subfamily BYRRHINÆ.

This subfamily is the largest of the four and also includes the greatest development of bodily size, although there are some minute forms also, such as *Syncalypta spinosa* Rossi. In North America we have four tribal groups, definable as follows:

- Mesosternum rather broad between the coxæ, with a broadly rounded median emargination for the tip of the short and wide prosternal process; mandibles not concealed in repose; elytra generally sparsely and simply punctate as in *Nosodendron* and similarly never having a trace of striation. PEDILOPHORINI
- Mesosternum as in the preceding tribe; mandibles generally not concealed in repose; elytra shining and very sparsely sculptured as in Pedilophorini, but having fine striæ which are feebly impressed and peculiarly disposed, those toward the suture uniting posteriorly with the sutural stria; legs more feebly retractile than usual, the abdominal sutures straight; body small in size. SIMPLICARIINI

- Mesosternum as in the two preceding tribes; mandibles concealed in repose by the prosternal lobe; elytra generally finely punctate and chagrined, the punctures generally fine and very close, the surface always striate, the striæ generally shallow and fine though abrupt, not impressed, regular in position though sometimes contorted slightly. BYRRHINI
- Mesosternum much narrower, wholly occupied by the deep transverse pit receiving the obtuse tip of the prosternal process; mandibles apparently not concealed in repose; elytra deeply sulcate; size minute. EXOMINI

The first three of these tribes are widely distributed throughout the subarctic regions of the world, while the fourth is represented by a single anomalous species from the coast regions of British Columbia.

Tribe PEDILOPHORINI.

In general form and sculpture, as well as in many structural features, this tribe plainly connects the more typical Byrrhids with the preceding very isolated *Nosodendron*. The several genera are definable and easily distinguishable by peculiarities of abdominal and tibial structure, as well as type of sculpture of the elytra and abdomen. The general structure is otherwise rather uniform throughout; and the antennæ are moderately short, gradually broader and compressed apically through the last six joints, the first stout, the third more or less elongate, slender and cylindric. The seven genera in my collection may be defined as follows:

- Tibiæ broad, very obtusely angulate externally or obliquely truncate externally at apex; crural depressions of the abdomen very shallow and gradual in formation, extending through the second segment, the sutures all fine, the first obsolete, the posterior feebly arcuate; frontal edge just behind the labrum sinuous, the sinus filled with pale coriaceous membrane. [Type *P. auratus* Duftsch.]. Palæarctic. ***Pedilophorus**
- Tibiæ less broad to slender, straight or feebly and evenly arcuate in outline externally throughout; frontal edge behind the labrum transverse, straight and unmodified; crural depressions of the abdomen never extending behind the first segment; all the sutures distinct. 2
- 2—Crural depressions of the abdomen very shallow and gradual in formation, undefined, the tarsi always free in repose. 3
- Crural depressions deep and abruptly formed, well defined to shelter the femora and tibiæ, the tarsi free; punctures of the elytra not evenly disposed as in the genera preceding but denser or sparser at various parts of the surface. 8
- 3—Legs stout, the tarsi short; vestiture of the upper surface recumbent,

- sometimes mingled with short feeble erect setæ, which are never very conspicuous. 4
- Legs slender, the tarsi conspicuously long. 7
- 4—Abdominal sutures arcuate. 5
- Abdominal sutures all perfectly straight from side to side. 6
- 5—First two abdominal sutures very fine, the last two strong. [Type *Pedilophorus nitidus* Schall.]. Palæarctic. ***Lamprobyrrhulus**
- All abdominal sutures equally distinct, the abdominal sculpture always more uniform and denser. [Type *Byrrhus æneus* Fabr.]. Palæarctic and nearctic. **Morychus**
- 6—Abdominal sutures equally distinct throughout, the ventral sculpture uniform and very close-set; pubescence of the upper surface not uniform as in all the preceding genera but condensed into streaks and spots, the condensations independent of the distribution of the punctures, the latter being uniform. [Type *Pedilophorus subcanus* Lec.]. Nearctic. **Tylicus**
- 7—Body very small in size, the under surface throughout very sparsely punctate, the abdominal sutures equally distinct, arcuate; vestiture of the upper surface consisting of long, erect and bristling hairs. [Type *Pedilophorus variolosus* Perris]. Palæarctic. ***Trichobyrrhulus**
- 8—Crural pits of the abdomen very deep, extending to and forming part of the hind margin of the first segment for a considerable distance at each side; first two sutures very fine, the last two coarse, nearly as in *Lamprobyrrhulus*; abdominal punctures very coarse and foveiform, close-set; punctures of the upper surface irregularly aggregated into denser spots and areas, wherein the generally polished surface frequently becomes more or less chagrined. [Type *L. formosus* n. sp.]. Nearctic. **Listemus**
- Crural pits almost equally deep, their well defined transverse posterior walls parallel with the hind margin of the first segment and at some distance therefrom to the extreme sides of the abdomen, the ventral surface rather finely and loosely punctured almost throughout, the first two sutures nearly as distinct as the last two; body much larger in size than in any other genus and with radically different sculpture, the pronotum evenly and moderately punctate, the elytra with even vittæ of aggregated punctures, separated by equally wide vittæ in which the punctures are very minute and much sparser. [Type *Pedilophorus lecontei* Wickh.]. Nearctic. **Eusomalia**

That the lack of elytral striation is a character of tribal importance is shown by its constancy, no trace of striation ever being visible even in *Pedilophorus lecontei* Wickh., where the perfectly even, alternately metallic green, strongly punctured and brilliant coppery, feebly punctured vittæ are unaccompanied by the faintest suggestion of striation.* Some species have an oblique spatuliform

* The indistinct sulcation of the elytra mentioned by Wickham in describing his *Pedilophorus hesperus*, I cannot understand, but presume that it is rather a corrugation of the surface, perhaps accidental and in no way striiform in nature.

lobe extending inferiorly from the apex of the third tarsal joint, well developed in *Morychus oblongus* Lec.; but in the very similar and apparently perfectly congeneric *subsetosus* of Fall, becoming virtually obsolete. It is therefore of no great taxonomic importance, —rather a surprising condition for a structural character of that nature. The indications are, also, that it varies sexually to some extent.

Pedilophorus Steff., *Lamprobyrrhulus* Ganglb. and *Trichobyrrhulus* Ganglb., are purely European and need not engage our attention further at the present time; the first is an isolated monotypic genus, the radically distinct anatomic characters of which distinguish it from the other two on the most cursory examination. It is furthermore not closely related to *Morychus* except in tribal features. The last two are considered subgenera of *Pedilophorus* in the recent European catalogue but erroneously, for, if they are subgenera, *Morychus* also must be so regarded and the latter is held to be distinct by the compilers of the catalogue.

Morychus Erichs.

The body in this genus is oblong-oval and convex, evenly and loosely punctate above, with short decumbent vestiture which is sometimes sparsely intermixed with short erect hairs and densely punctate and pubescent beneath. The three species in my cabinet may be defined as follows:

- Tarsi strongly lobed beneath.....2
 Tarsi with the lobe vestigial.....3
 2—Form rather broadly, evenly oblong-oval, convex, strongly shining, with cupreo-æneous lustre, the under surface and legs deep black, the tarsi alone pale; vestiture above rather fine, fulvous, unmixed with more erect hairs and easily removable; that beneath a little shorter, more cinereous and denser; head evenly convex, moderately closely and finely but deeply perforato-punctate, the antennæ piceous-brown, slightly darker and gradually enlarged distally; prothorax but very slightly more than twice as wide as long; sides converging and very feebly medially arcuate from base to apex, the angles sharp, the posterior slightly, the anterior notably, acute; punctures like those of the head, well separated throughout; scutellum densely flavo-pubescent; elytra parallel, with but feebly arcuate sides, very obtusely rounded at apex, a third longer than wide, the punctures deep, perforate, not very coarse and well separated throughout; under surface very densely, rather strongly but only moderately coarsely punctate throughout. Length 5.0

mm.; width 2.8 mm. Vancouver Island and British Columbia (Goldstream). [*Pedilophorus oblongus* Lec.,—Report Survey 1857, p. 39].....**oblongus** Lec.

Form nearly similar, the upper surface rather more convex, strongly shining, with brilliant metallic-green lustre, black beneath, the tarsi piceous; pubescence of the upper surface notably longer, coarser, closer and more persistent than in *oblongus* and becoming somewhat bristling toward apex, rather coarse, close and pale yellowish-cinereous beneath; head nearly as in the preceding; prothorax less transverse, barely twice as wide as long, the sides and angles nearly similar, the base more angulate medially; punctuation nearly similar, the vestiture closer and coarser; scutellum similar; elytra fully a third longer than wide, the sides rather arcuate, the apex rather less broadly rounded than in *oblongus*, the width at the middle more evidently exceeding that of the prothorax, the punctures nearly similar and well separated but finer; under surface similarly very densely sculptured. Length 4.6 mm.; width 2.65 mm. British Columbia (Vernon),—Venable.....**insulsus** n. sp.

- 3—Outline and convexity as in *oblongus*, shining, rather obscure æneous in lustre above, wholly black, with feeble piceous tinge beneath, the tarsi not paler; pubescence of the upper surface rather short, fulvous, plentiful and rather persistent, intermixed with numerous erect and bristling hairs laterally and toward tip, the erect hairs rather more cinereous or silvery; hairs of the under surface much shorter, more even and dense; head evenly convex as in the two preceding but with the punctures finer; prothorax distinctly more than twice as wide as long, the sides more strongly converging from base to apex, feebly arcuate, the punctures rather fine, distinctly separated but closer than in the two preceding; elytra as in *oblongus*, very obtusely rounded behind, the punctures like those of the pronotum but rather stronger, closer than in the two preceding; abdomen equally densely and somewhat more finely punctured. Length 4.0 mm.; width 2.3 mm. Montana (KalisPELL),—Wickham. [*Pedilophorus subsetosus* Fall,—Tr. Am. Ent. Soc., 1907, p. 224].
subsetosus Fall

Besides the above, the four following species have been described as follows:

Oval, convex, obliquely attenuate anteriorly, obtuse posteriorly, dark greenish-bronzed above, uniformly but not closely punctured and clothed with coarse white hairs; prothorax twice as wide as long, strongly narrowed in front, the sides oblique and scarcely rounded; scutellum clothed with white hair; elytra oval, wider than the prothorax, obtusely rounded behind; under surface piceous, densely punctured, covered with brownish-gray pubescence; tarsi not lobed beneath. Length 4.2 mm. Nebraska. [*Pedilophorus æneolus* Lec.,—Sm. Misc. Coll., 167, 1863, p. 74].....**æneolus** Lec.

Oblong, blackish, feebly shining, with faint æneous tinge, the pubescence pale, recumbent and moderately coarse; head deeply and densely, rather coarsely punctured, the front with a distinct median fovea,

around which the punctures are less crowded; antennæ piceous-red, gradually enlarged and blackish distally; prothorax distinctly, finely and rather closely punctured, narrowed anteriorly, the sides not arcuate but slightly sinuate, the lateral margin sharp, the angles all acute; scutellum with pale yellowish pubescence throughout; elytra continuing the outline of the prothorax, finely, distinctly and fairly closely punctured and indistinctly sulcate, the sides subparallel, the tips conjointly rounded; under surface rufo-piceous, thickly clothed with pale pubescence which almost conceals the sculpture, especially on the abdomen; legs piceous, the femora paler, all grooved for the reception of the tibiæ; tibiæ spinulose externally, the front and middle pairs with the external margin arcuate, the posterior simply broader toward tip, the anterior alone grooved for the reception of the tarsi; third tarsal joint lobed beneath. Length 4.0 mm. Colorado (Leadville). [*Pedilophorus hesperus* Wickh.—Can. Ent., 1903, p. 182]. **hesperus** Wickh.

Broadly oblong-elliptical, dark cupreo-æneous, the pubescence very short, fine, sparse and recumbent; head coarsely, rather closely punctate throughout; prothorax with the sides nearly straight, the hind angles distinctly acute, the anterior only slightly less than right; surface more finely and sparsely punctured than the head, the punctures separated by from two to four times their own diameters at the middle, becoming closer and slightly larger at the sides, having a distinct foveiform depression within the hind angles; elytra punctured like the pronotum; under surface piceous, densely punctate and pubescent as usual; third tarsal joint lobed. Length 5.6 mm.; width 3.3 mm. Washington State. [*Pedilophorus subcupreus* Fall,—Tr. Am. Ent. Soc., 1907, p. 225]. **subcupreus** Fall

Moderately broadly oblong-elliptical, blackish, with feeble green-bronze lustre, shining, clothed with recumbent black hairs, which become predominantly mingled with white and brown laterally, inclosing at the sides of the elytra a conspicuous dark spot; antennæ black, the sixth joint as wide as long, the seventh distinctly transverse, eighth to tenth strongly transverse; head moderately closely, strongly punctate, with a smooth spot at the middle of the vertex but without frontal fovea; prothorax nearly as wide as the elytra, the sides nearly straight, the angles acute; surface deeply but not coarsely punctate, the punctures separated by a little more than their own diameters at the middle, becoming slightly larger and closer laterally; elytra with the sides parallel and very feebly arcuate in basal two-thirds, the punctuation similar to that of the pronotum; under surface rufo-piceous, densely, rather coarsely punctate, with recumbent ochreo-cinereous pubescence; tarsi not lobed. Length 4.0 mm.; width 2.4 mm. New Mexico (Las Vegas). [*Pedilophorus lateralis* Fall,—l. c., p. 225]. **lateralis** Fall

In noting the published characters of the four species last described, which are unknown to me and provisionally referred to *Morychus*, it becomes evident that some doubt may attach to

hesperus Wickh., in this generic assignment. It is probable that the feeble sulcation of the elytra referred to is to some extent accidental, as before remarked; and in fact one of my examples of *oblongus* exhibits a faint longitudinal costulation by oblique illumination, though this is unaccompanied by the feeblest trace of true striation. But in *hesperus* mention is made of a distinct frontal fovea, and it is said that the antennæ are relatively much stouter than in *lecontei*; as the antennæ in the latter are not materially more slender than in the prevailing type of *Morychus*, it may be that we have here another decisive divergence; these discrepancies, together with the aberrant coloration of the legs, render the assignment of *hesperus* to *Morychus* somewhat doubtful. *Lateralis* Fall, is also doubtfully attached to *Morychus* and I would assign it to the genus *Tylicus*, which follows, in company with *subcanus* Lec., if it were evident that the abdominal sutures were perfectly straight and not arcuate. *Subcupreus* Fall, is almost undoubtedly a close congener of *oblongus* and *subsetosus*, but of *æneolus* Lec., the published characters are not sufficient to warrant a decision.

Tylicus n. gen.

The perfectly rectilinear abdominal sutures in this genus form a striking and apparently valid taxonomic character, accompanied as it is by a number of other more or less evident differences. The vestiture of the upper surface, for example, is not uniform in distribution as it is in *Morychus*, but is condensed into streaks and spots; but, singularly, this condensation is not accompanied by any material condensation of the punctures, for under sufficient optical power the punctures are observed to be distributed uniformly under these patches of condensed pubescence, just as they are in *Morychus*, showing that it is only those genera in the tribe Pedilophorini having deep and abrupt fossæ for the reception of the hind legs, that the sculpture of the elytra becomes irregular.

The single type of *Tylicus* may be known by the following short diagnosis of LeConte:

Elongate-oval, convex, rounded behind, obliquely narrowed in front of the elytra, black, irregularly mottled with very short gray pubescence like hoar-frost and thinly clothed with short, erect, black bristles; under surface finely, densely punctured, finely pubescent; legs piceous, the tarsi paler, the fourth [third] joint with a long lobe.

Length 4.25 mm.; [width 2.4 mm.]. Escanaba (Lake Superior). [*Pedilophorus subcanus* Lec.—Pr. Am. Phil. Soc., 1878, p. 609].

subcanus Lec.

The erect black bristles are very stiff but not squamiform as they are in the *Syncalypta* section of the Byrrhini; they are short but numerous and somewhat conspicuous. The gray hairs are scattered more especially toward the sides and apex, but not condensed into spots, the hairs forming the condensed streaks and spots alluded to above, being formed exclusively of decumbent black hairs. The abdomen is sculptured differently from any *Morychus* known to me; there the punctures are somewhat coarse, very dense and subconfluent; here they are notably fine and deep; but, though very close, they are well defined and isolated among themselves and very evenly distributed throughout. The second segment is longer than either the third or fourth.

Listemus n. gen.

In this genus the hind femora and tibiæ are securely sheltered in repose within very deep fossæ, extending fully to and for some distance along the hind margin of the first ventral segment, the tarsi being free. This is a radical taxonomic feature separating *Listemus* and *Eusomalina* from *Morychus* or any of the genera allied thereto. In addition, in *Listemus* the abdomen becomes very coarsely cribrate, but the sutures are arcuate as in *Morychus*, the last two coarse, the first two fine, which constitutes another structural difference between the two genera. The tarsi are lobed beneath throughout and strongly so as a rule. I have before me at present the three following species:

Condensed areas of elytral punctuation very feebly defined and but slightly differentiated. Form elongate-oval, very convex, gradually and rather narrowly rounded behind when compared with *Morychus*, shining, bright æneous in lustre, with feeble greenish tinge, deep black throughout beneath, the tarsi alone paler, piceo-testaceous; vestiture above consisting of rather long, sparse and decumbent pale fulvescent hairs, without intermixed erect hairs, on the under surface short, sparse, more cinereous but inconspicuous; head evenly convex, rather strongly, closely punctate, becoming almost impunctate centrally; prothorax two and one-half times as wide as long, strongly narrowed from base to apex, the sides nearly straight, the apical angles produced and very acute; punctures fine, sparse and but slightly uneven in distribution, rather coarse but still widely

- separated toward the sides; scutellum small, longer than wide, acute, with rounded sides, nearly nude; elytra a fourth longer than wide, near basal third but slightly wider than the prothorax, the sides continuing the sides of the latter, thence gradually narrowing, with broadly, then strongly, rounding sides to the tip; punctures not coarse but deep, sparse, larger and subserial in arrangement toward the sides, becoming finer and still sparser in a few indefinite, smoother and rather more shining areas on the upper part of the surface; under surface convex, densely and coarsely cribrate. Length 3.8 mm.; width 2.2 mm. Northern Pacific coast regions. [*Morychus acuminatus* Mann.,—Bull. Mosc., 1852, p. 341]...**acuminatus** Mann.
- Condensed areas on the elytra abruptly defined, the smooth areas speculariform and almost impunctate. 2
- 2—Form shorter and less posteriorly acuminate than in the preceding, broadly oval, very convex, black, with feeble æneous to bright metallic green lustre, the under surface and legs deep black throughout, the tarsi not materially paler; pubescence of the upper surface short, rather coarse, recumbent, without intermixed erect hairs, very uneven in distribution, close on the punctured part, almost wanting in the smooth areas, intermingled fulvous and subcinereous in color, very short, sparse and cinereous on the under surface; head evenly convex, coarsely and densely punctured throughout; prothorax more than twice as wide as long, strongly narrowed from base to apex, with feebly subsinuate sides, very strongly declivous toward the apical angles, which are produced and acute as usual; surface finely, closely punctate medially, with the pubescence radial in arrangement, coarser and rather sparser toward the sides; scutellum very small; elytra about a fifth longer than wide, two and three-fourths times as long as the prothorax and subequal thereto in width, the sides parallel and feebly arcuate, gradually obtusely rounding from about the middle, the apex moderately obtuse; punctures densely aggregated in large areas, leaving a few mirror-like spots and streaks, which are smooth and very minutely, remotely punctured, the condensed areas having the surface generally somewhat chagrined; under surface coarsely but rather less densely cribrate than in *acuminatus*. Length 3.65 mm.; width 2.1 mm. California (Arcata, Humboldt Co.).**formosus** n. sp.
- Form and sculpture nearly as in the preceding, black, the upper surface strongly shining throughout and somewhat bronzed, the under surface and legs black, the tarsi piceous; vestiture above short, decumbent, rather sparse, mottled confusedly bright fulvous-red and cinereous, still shorter, sparser and cinereous beneath; head strongly and densely punctate, evenly convex; prothorax nearly as in the preceding in form, sculpture and pubescence; elytra nearly as in the preceding but still shorter, only very little longer than wide and more broadly and obtusely rounded behind, the punctures coarser, deep, evenly distributed and separated by not quite twice their own diameters everywhere except in a few generally rounded spots which are mirror-like and finely, very remotely punctulate, the surface throughout the coarsely punctured areas smooth and

shining, not at all chagrined; under surface coarsely cribrate as in *formosus*, the tarsi notably shorter and still more slender. Length 3.25 mm.; width 1.9 mm. California (Hoopa Valley, Humboldt Co.).
satelles n. sp.

The last two species are mutually rather closely allied, but may be distinguished by the sculpture as well as the more obtuse elytra of *satelles*. In *formosus* the coarse elytral punctures become contiguous, with the surface opaculate, toward base, while in *satelles*, though coarse and becoming very slightly closer basally, they are always clearly isolated, with the interstices shining like the rest of the surface.

The much smaller and practically nude scutellum of this genus is another element distinguishing it from *Morychus* and allies. In the next genus the scutellum is rather better developed, but is relatively not so large as in *Morychus* and differs in being nude and not densely pubescent.

Eusomalia n. gen.

This genus is represented thus far by a single splendid species, by far the largest of the Pedilophorini and very aberrant in sculpture and ornamentation. Structurally it differs from *Listemus* in having the deep fossæ for the hind legs end posteriorly in a straight transverse line, parallel to the apex of the first ventral but at some distance therefrom; the tarsi are similarly free and are lobed beneath. The type may be described as follows:

Evenly and broadly oval, very convex, strongly shining, the pubescence of the upper surface fine, decumbent, excessively short and sparse and scarcely discernible, still less evident on the virtually glabrous under surface; upper surface bronzed anteriorly, the elytra with broad vittæ, lost at the sides, alternately deeply but not densely, toward the sides coarsely, punctured and bright metallic green in color, and equally wide, minutely, sparsely punctured and bright coppery in lustre; under surface and legs black throughout, the tarsi scarcely paler; head strongly, not densely punctate, convex, with a feeble indentation on the median line at a little behind the line of the eyes; antennæ dark piceo-testaceous, of the usual form in the tribe though only moderately thickened distally; prothorax more than twice as wide as long, narrowed from base to apex, with nearly straight sides and acute angles, the apical produced; surface evenly, rather finely and sparsely punctate, more coarsely and slightly more closely toward the sides, where there is a broad gutter-like impression along the side margins, becoming obsolete basally; scutellum a little longer than wide, acute, flat, nearly nude; elytra a fourth longer than wide, oval, obtuse and very strongly declivous behind,

the apex feebly lobed from a vertical viewpoint; sterna coarsely but not densely cribrate, the abdomen much more finely, rather sparsely punctate, more coarsely at the middle of the first segment and with a very dense patch at each side of the second segment. Length 7.7 mm.; width 4.9 mm. Idaho (Cœur d'Alene),—Wickham. [*Pedilophorus lecontei* Wickh.,—Can. Ent., 1903, p. 180].

lecontei Wickh.

Prof. Wickham very kindly consented to part with one of the only two known examples of this species, and it now rests in my collection as one of its most valued specimens.

Tribe SIMPLOCARIINI.

Comparatively few species, widely distributed over the higher latitudes of the northern hemisphere, are sufficiently isolated in structure to require a separate group or tribe under the above name. They differ widely from the Byrrhini in their shining and sparsely sculptured integuments, less closely retractile legs and peculiar system of elytral striation; from the preceding tribe they differ in possessing true elytral striae. There are two genera as follows:

Posterior femora in repose resting under and against the hind coxæ throughout, the coxæ extending to the sides of the body, the epipleura narrow anteriorly, gradually disappearing at the usual point opposite the hind coxæ; antennæ gradually enlarged and compressed distally through about the last five joints as in the preceding tribe. [Type *S. metallica* Sturm]. Palæarctic and nearctic... **Simplocaria**

Posterior femora in repose resting against both the hind coxæ and the obliquely truncated posterior end of the anterior part of the epipleura, the latter much wider than in *Simplocaria*, the hind coxæ not attaining the sides of the body; antennæ with an abrupt 3-jointed club. [Type *S. carpathica* Hampel]. Palæarctic.....***Trinaria**

Trinaria Muls., is represented at present by the type species only; there are some forms of true *Simplocaria*, such as *acuminata* Erichs., that imitate it very closely in outward form and especially in the nearly glabrous integuments and sharply acuminate tip of the elytra, but the epipleura and hind coxæ, as well apparently as the antennæ, do not depart from the normal type of *Simplocaria*, where the scutellum throughout is better developed than in *Trinaria*; the latter should therefore be considered a distinct genus and not a subgenus of *Simplocaria*, where it now rests in the latest European catalogue.

Simplocaria Markh.

Either our species have not been well collected, or the genus *Simplocaria* is much less developed in America than it is in Europe; I am inclined to the latter assumption. My collection, however, seems to include three species, which may be separated as follows:

Hind tarsi less elongate, much shorter than the tibiæ, very slender, completely non-lobate. Form elongate-elliptic, convex, notably pointed behind, piceous-black, the upper surface with shining bronzy lustre, the under surface black, the abdomen rufo-piceous, the legs pale brownish-testaceous throughout; pubescence above rather sparse, longer and uniform on the pronotum, variegated with silvery patches on the elytra, short, decumbent, uniform and moderately close beneath; head evenly convex, minutely, sparsely punctulate; antennæ rather slender, almost black throughout; prothorax slightly more than twice as wide as long, the sides strongly converging and feebly arcuate from base to apex, the apical angles only moderately advancing but very acute; surface very finely punctate, more closely toward the middle, rather more sparsely and not at all more coarsely toward the sides; scutellum equilatero-triangular, having radiating hairs which are not very dense; elytra evenly oval, one-half longer than wide, the sides arcuate, continuing the curvature of the thoracic sides, gradually rounding to the conjointly pointed apex, the striæ fine but distinct, somewhat impressed, evanescent apically, the sutural deeper posteriorly, the second and third joining the sutural at posterior third and fifth; punctures almost invisible, sparse; abdomen rather finely and not deeply, subconfluently punctate, the sutures all distinct and straight, the second segment longer than the third or fourth. Length 3.0 mm.; width 1.65 mm. British Columbia (Caraboo District). **columbica** n. sp.

Hind tarsi much longer, equaling the hind tibiæ in length or very nearly. 2—Form nearly as in *columbica* but not quite so pointed behind, black and shining, the upper surface with faint bronzy lustre, the under surface picescent, the abdomen slightly, the legs much, paler; pubescence nearly as in the preceding but rather more abundant, that of the pronotum shorter, fine and less distinct; head nearly similar; prothorax notably more developed and not so short, barely twice as wide as long, in form and sculpture nearly as in the preceding; elytra evidently less than one-half longer than wide, evenly and broadly rounded at the sides, continuing those of the prothorax, the apices conjointly moderately acute; punctuation sparse and very minute; striæ stronger and more impressed than in *columbica* and continuing to the tips, the sutural rather deeply impressed throughout, the lateral also distinct in about median third of the length, the second and third joining the sutural near the tip; under surface nearly as in the preceding, the punctuation shallow and still finer, very dense on the abdomen. Length 2.8–3.2 mm.; width 1.45–1.68 mm. [*Byrrhus tessellatus* Lec.—Agassiz, Lake Superior, 1850. p. 224.]

tessellata Lec.

Form rather more elongate, black, shining, with only the faintest bronzy lustre, the under surface piceous, the legs paler, rufous; pubescence scantier than in either of the preceding, the elytra only very faintly variegated with irregular patches of very short silvery hairs; head and prothorax nearly as in the preceding, except that the small punctures of the pronotum are still more minute and less close-set medially, becoming still sparser and almost invisible laterally; scutellum much less pubescent; elytra rather more elongate and still more rapidly and obtusely ogival at apex, somewhat less arcuate at the sides and a little more rapidly rounding posteriorly, the striation as in *tessellata*, the punctures everywhere sparse and extremely minute; abdomen closely but finely and unusually feebly punctato-rugulose. Length 2.8-3.0 mm.; width 1.5 mm. Colorado.

subnuda n. sp.

It is assumed that the species named *tessellata* in the table, not rare in the elevated parts of New Hampshire, is the same as that referred to in two brief lines by LeConte as inhabiting the southern shore of Lake Superior; I found one example at the extreme summit of Mt. Washington and it is probably widely diffused in the colder regions of the continent. It is however not the same as the European *metallica*, being more elongate in form and much less broadly obtuse posteriorly. All of the above species are more elongate than any of the four European species in my collection; excepting *acuminata* Er., and that is much smaller and of radically different sculpture and vestiture.

Tribe BYRRHINI.

The chief outward character of this tribe is the stout oval and convex body, with finely, very densely punctured, densely pubescent integuments and deeply retractile legs. The elytral striæ are more or less fine, having the nature of abruptly formed shallow grooves—not impressed lines as in the preceding tribe—and are almost regular, the three or four beyond the sutural not entire but never joining the sutural stria; occasionally the striæ are represented merely by series of detached punctures. The antennæ are short, very gradually stouter distally and with the third joint elongate, not differing materially from the usual form in the preceding tribes, and the abdominal sutures are all distinctly arcuate. The six genera known to me may be defined as follows:

Fossæ for the hind legs deep though rather gradually formed, without prominent margins; upper surface never having erect setæ; size moderate to rather large.....2

- Fossæ still deeper and much more abruptly formed, defined by an elevated bead-like margin; upper surface always bristling with short erect clavate or squamiform setæ; size small to minute. 3
- 2—Tibiæ more slender, nearly straight, obliquely truncate externally at apex; abdominal segments finely, densely chagrined and opaque laterally and along their apices; vertex unmodified. [Type *B. sericeus* Forster]. Subarctic of the northern hemisphere. **Cytilus**
- Tibiæ broader, more flattened, always evenly rounded externally throughout their length; abdominal segments never finely chagrined at any part of the surface; vertex generally with a short transverse line at the middle, immediately behind which there are two small pale ocellæ-like spots. [Type *B. fasciatus* Forster]. Subarctic of the northern hemisphere. **Byrrhus**
- 3—Elytral striæ extremely fine and scratch-like; epipleura anteriorly very narrow and ill-defined. [Type *B. murinus* Fabr.]. Palæarctic and nearctic. **Porcinolus**
- Elytral striæ less fine and always punctate; sometimes consisting simply of series of detached punctures. 4
- 4—Epipleura anteriorly very narrow and not well defined; sculpture dense, at least beneath. 5
- Epipleura anteriorly broad and well defined along the metasternum; sculpture sparse throughout; size more minute. 6
- 5—Antennæ very gradually enlarged distally; sculpture of the elytra somewhat as in *Cytilus*, the intervals alternating somewhat in elevation; scutellum well developed. [Type assumed *C. erichsoni* Reitt.]. Palæarctic. ***Curimus**
- Antennæ with a 3-jointed club, which is not abruptly formed but rather gradual; elytral striæ generally less groove-like and tending to be represented by series of shallow irregular punctures, the intervals all flat and equal; scutellum minute; clavate setæ more linear in arrangement; body of much smaller size. [Type *B. striatopunctata* Steff.]. Palæarctic and nearctic. **Curimopsis**
- 6—Elytral striæ replaced by unimpressed series of shallow detached punctures; integuments virtually glabrous; scutellum very small; clavate setæ forming even single series. [Type *S. spinosa* Rossi]. Palæarctic. ***Syncalypta**

We have no exclusively American genus in this tribe so far as discovered, but *Curimus* Er., and *Syncalypta* Steph., as well as the subgenus *Seminolus* Muls., differing from *Byrrhus* in the broader body and longer antennæ, seem to be confined to the European fauna, the species which we have assigned to *Syncalypta* forming part of the closely allied *Curimopsis* Gangl. My single example of the very small *Syncalypta spinosa* is closely retracted, so that I cannot describe the antennæ.

Cytilus Erichs.

There are probably a number of true species in this genus, but they are so very closely allied among themselves that it is hardly worth while to define some of them as having more than subspecific value. Our forms, as a group, are more elongate or more oblong than the European and the almost hemispherical *sericeus* Forst., does not occur here so far as detectible among my rather extended material. Our species may be briefly described as follows:

Oblong-oval, very convex, black, with feeble blackish-bronze lustre which is more pronounced on the alternately more shining striae intervals, the bronze becoming frequently bright green; under surface black, the legs throughout piceous-black; pubescence above short, close and irregular, very short, cinereous and somewhat even on the pronotum but fulvous and streaming radially in a median basal area; scutellum densely aurato-pubescent, the hairs directed transversely from the median line; elytra with the intervals not more than very faintly alternating in convexity, all virtually flat, alternately dull, densely, finely and evenly sculptured with even prostrate blackish and partly cinereous hairs, and a little broader, more lustrous, less densely sculptured and with the pubescence black and in separated irregular areas, producing a tessellated effect; under surface finely, very closely punctured throughout and with very minute inconspicuous pubescence; head strongly, densely punctate and with very short inconspicuous pubescence; prothorax twice as wide as long, very strongly narrowed from base to apex, with scarcely at all arcuate sides, very declivous and distinctly compressed laterally toward apex, the anterior angles advanced and very acute, the punctures fine, close and even throughout, parted by a fine smooth median line; elytra about a fifth longer than wide, very obtusely rounded at apex. Length 5.2-5.4 mm.; width 3.25-3.4 mm. New Hampshire, Pennsylvania, Canada and Lake Superior. [*Byrrhus alternatus* Say,—J. Ac. Phil. 5, 1825, p. 186; *B. trivittatus* Melsh.,—Pr. Ac. Phil., II, 1844, p. 117]..... **alternatus** Say

A—Similar throughout to *alternatus*, except that the body is slightly smaller and still less broadly oval, with the striae intervals more evidently convex, especially on the flanks, where the punctures of the striae are very much more evident. Length 4.5-5.0 mm.; width 2.8-3.1 mm. California (Truckee and Lake Tahoe).

mimicus n. subsp.

B—Similar to *alternatus* but larger and still more elongate, the elytral flanks perfectly similar and not modified as in *mimicus*; entire elytra frequently vivid green. Length 5.2-6.0 mm.; width 3.0-3.3 mm. Washington State and British Columbia to Colorado; those from the last-named region more sober in coloration.

longulus n. subsp.

Oblong-oval, shorter than *alternatus*, rather dull in lustre, black, without metallic glint; somites similarly formed, the vestiture of the upper

surface short, sparser and less variegated; pronotum with the punctures not quite so small and more separated; scutellum wider than long, triangular, with rounded sides, finely, densely punctate but denuded in the type; elytra similar but shorter, scarcely visibly longer than wide, very minutely, closely punctate, the narrower intervals flat and more opaque, the wider very feebly convex, the striæ laterally not finely and visibly punctate as in *alternatus* but almost impunctate. Length 4.8 mm.; width 3.2 mm. Newfoundland (Codroy, Little River).....*nigrans* n. sp.

Nigrans is founded upon a single specimen, so completely denuded that only very few short hairs remain and these only on certain parts of the elytra, but it differs from *alternatus* or any of its subspecies very decisively in the form of the scutellum, which is longer and more acute in that species, and in the form of the lower margin of the elytra basally, this being strongly arcuate and more protuberant in *nigrans*; it also differs in its shorter form, stronger and less dense pronotal punctures and much less punctate legs.

Byrrhus Linné.

This is the largest genus of the family and in the European fauna consists of two sections, one in which the body is more narrowly oval and the other in which it becomes very broadly oval, larger in size, more roughly sculptured as a rule and with rather longer antennæ—named *Seminolus* by Mulsant and Rey. The first section, or normal *Byrrhus*, is very abundant throughout the colder parts of North America, but *Seminolus* has not thus far occurred here. The numerous species form a difficult study, more because of imperfect condition of the specimens than for any other reason, the vestiture being readily removable in many cases, but especially because it is liable to be damaged or obscured by exuded grease. In addition to this, decided structural differences are almost wanting, the specific criteria consisting for the most part of a limited though recognizable diversity in size and outline or in the arrangement of the vestiture and ornamentation. It is for these reasons that the greater member of described European species are now listed as varieties of a comparatively few more pronounced types. In cases of doubt I have placed some of our own forms in that category provisionally. The majority of the American species conform in general features of structure and ornamentation with the *arietinus* type of the palæ-arctic fauna, though we have also a few peculiar types such as

kirbyi, *pettiti*, *centralis* and *egenus*; those represented in my collection may be defined as follows:

- Form almost evenly oval, sometimes even somewhat pointed behind. . . . 2
 Form very evidently posteriorly inflated, widest near posterior third, the apex very obtusely rounded. 19
- 2—Elytra with black or blackish vestiture, crossed medially by an almost even solid chevron of pale fulvous—or as described by Horn in the Canadian type silvery white—decumbent hairs. Body about two-thirds longer than wide, convex; integuments black, the legs feebly picescent, the tarsi moderately pale; head notably small, closely punctured, the hairs short, moderately numerous; prothorax rather less than one-half as long as its basal width, much more than twice as wide as the head, the sides unusually strongly convergent from base to apex, somewhat sinuate behind the middle, the basal angles very acute; surface finely, densely punctate, the sculpture obscured by the short coarse dense vestiture, which is black, largely variegated with fulvous; scutellum and elytra with the black pubescence irregularly rather denser on the alternate intervals and mingled toward the sides and apex with very short silvery or cinereous hairs; entire under surface densely, asperately and not very coarsely punctate and with very short, not dense cinereous hairs, the legs similarly sculptured and pubescent, the tarsi smooth and shining, with numerous oblique and rather fine pale hairs beneath. Length 8.2 mm.: width 4.8 mm. Indiana. [*B. pettiti* Horn,—Tr. Am. Ent. Soc., 1870, p. 76]. *pettiti* Horn
- Elytra crossed near the middle by two fine transverse and very irregular bands of silvery pubescence, obtusely connected laterally and chiefly traceable by spots on the alternate intervals, the anterior band almost always anteriorly angulate suturally, the posterior irregularly posteriorly arcuate in its general course. 3
- Elytra with the transverse bands very indistinct, wanting or incomplete, but with a common transverse solid sutural spot, near the middle, of whitish pubescence; body rather small in size and more narrowly oval, the general pubescence rather conspicuously variegated. . . . 12
- Elytra without transverse bands or spots, only longitudinally variegated by condensations on the alternate intervals, sometimes apparently not variegated at all. 14
- 3—Larger species, 7 mm. or more in length, apparently a little smaller in *cyclophorus*. 4
- Smaller species, 6 mm. or less in length. 10
- 4—Two transverse elytral pale bands inclosing a subcircular area, which is anteriorly emarginate. Body briefly oval, blackish-piceous, very finely coriaceous, cinereously pubescent; antennæ rufescent, the first and last joints infuscate; elytra with two vittæ of black, which are somewhat interrupted, the common subcircular maculation of the elytra of fusco-æneous squamules. Described thus by Mannerheim from Alaska (Kenai) examples. Length 6.5 mm.; width 4.0 mm. [*B. cyclophorus* Kirby,—Richardson Faun. Bor. Am., IV, p. 117]. *cyclophorus* Kirby

- Two transverse elytral lines inclosing a transversely crescentiform area. 5
- 5—Pubescence of the pronotum short, closely decumbent and but slightly variegated; abdomen finely sculptured. 6
- Pubescence of the pronotum longer or more variegated and more conspicuous. 8
- 6—Abdominal asperities rather close-set and notably strong though fine. Oblong-oval, dark brown in color throughout above and beneath; head very closely and finely chagrined posteriorly, rather coarsely and loosely punctured anteriorly, the hairs short, the transverse impressed line and widely separated ocellæ-like spots distinct; prothorax long, fully one-half as long as the basal width, the strongly converging sides nearly straight; punctures fine and close but distinct, still more minute and very close broadly along the median line, the pubescence short, obscure fulvous, but feebly variegated with silvery spots; scutellum densely clothed with brownish-black hairs; elytra parallel, two-fifths longer than wide, obliquely rounding at the sides in about posterior third, the apex not very broad and transversely rounded; alternate intervals with elongate areas of denser and more blackish-brown pubescence, the anterior broken silvery band narrowly advanced and truncate at the suture; metasternum coarsely, very densely punctato-rugose. Length 9.0 mm.; width 5.4 mm. Lake Superior (Whitefish Point). . . *brunnescens* n. sp.
- Abdominal asperities not so close-set and very feeble, the general sculpture of that part much more inconspicuous than usual. 7
- 7—Body throughout black, the legs slightly picescent, the tarsi not paler; body rather broadly oval; head sculptured nearly as in the preceding, the transverse impressed line of the vertex very feeble, the widely separated pale spots posterior thereto distinct; prothorax more transverse, much less than half as long as the basal width, the strongly converging sides somewhat arcuate basally; punctures more minute than in the preceding, close-set but even throughout, not closer along the middle; pubescence blackish, with a few silvery hairs at some points; scutellum densely velvety-black; elytra nearly as in the preceding, more elongate and more obtuse behind in the male than in the female, the pubescence black, not wholly concealing the surface except in the dense elongate patches of the alternate intervals, the silvery bands as in the preceding; metasternum closely rugose, becoming not densely punctate posteriorly toward the middle; mesosternal emargination very broad and shallow. Length (♂) 8.3–8.8 mm., (♀) 7.5–8.0 mm.; width (♂) 5.0–5.15 mm., (♀) 4.6–5.0 mm. New Jersey (Atlantic City), Indiana, Iowa and Lake Superior (Bayfield). [*B. americanus* Lec.,—Agassiz, Lake Superior, 1850, p. 224]. *americanus* Lec.
- A—Nearly similar but larger, deep black throughout, the legs not at all and the tarsi but slightly paler; head notably larger, similarly sculptured, except that the transverse central line is shorter, sharper and more arcuate, the pale points very small; prothorax less transverse, almost similarly sculptured, the surface medially becoming more opaque and with the punctures a little finer

though no denser than laterally; scutellum similar; elytra nearly one-half longer than wide, sculptured nearly as in the preceding, the pubescence largely denuded in the type, the apex subevenly and rather strongly rounded. Length 9.6 mm.; width 5.65 mm. New Hampshire.....**neglectus** n. subsp.

- B—Very similar in general form and size to *americanus* but smoother, more piceous in color, the short black vestiture of the pronotum mingled with fulvous and not silvery hairs, the vestiture of the elytra shorter, with similar scattered silvery hairs, especially on the alternate intervals behind the black condensations, but with the space enclosed by the transverse irregular silvery lines containing fulvous and not black hairs, these fulvous hairs forming rather solid blotches; under surface castaneous-brown, the fine asperities of the abdomen sparser than in *americanus*. Length 8.6 mm.; width 5.1 mm. Manitoba (Aweme),—Criddle.

manitobæ n. subsp.

- Body blackish-brown in color, paler rufo-piceous beneath, the legs nearly black, the tarsi but slightly paler; form more elongate and parallel than in the two preceding species; head nearly as in *neglectus* throughout; prothorax also nearly similar, but little less than one-half as long as the basal width, the converging sides becoming feebly sinuate near basal third and not nearly straight throughout as they are in *neglectus*; punctures very fine and close-set, the pubescence short, closely decumbent, not dense, black and but feebly variegated; scutellum densely nigro-pubescent; elytra nearly one-half longer than wide, the sides parallel and straight to well behind the middle, then gradually rounding and converging to the moderately obtuse tip; pubescence blackish but not dense, not concealing the finely, densely chagrined and punctulate surface, except in the denser longitudinal patches of the alternate intervals, the transverse silvery bands as in *americanus*; metasternum densely rugose laterally, closely but clearly, asperately punctate medially, the punctures becoming much finer and still closer medially behind, the median line very finely subimpressed, crossed just behind the middle by a short impressed transverse fossa. Length 8.8 mm.; width 5.0 mm. Labrador (West St. Modest).**imperitus** n. sp.

- Body having almost exactly the same rather narrow subparallel form of *imperitus*, differing in having the head very much smaller in size, the prothorax shorter, distinctly more than twice as wide as long, with the vestiture not quite so short and much less uniform, being variegated by an intricate pattern of pale lines; elytra nearly similar; metasternum not so shining and not having distinctly defined punctures anteriorly but with coarser confluent imbriform rugulation in subtransverse wavy lines; abdomen with the very fine and well separated asperities still finer, the hairs arising therefrom finer, more obscure and much less visible. Length 8.0 mm.; width 4.8 mm. Manitoba (Aweme),—Cridle.....**angustulus** n. sp.

- 8—Mesosternal emargination much deeper, its sides becoming almost parallel anteriorly, generally somewhat narrower. Moderately small in size, elongate-oval, black throughout, the legs scarcely,

the tarsi slightly, paler; head rather small, very convex, strongly, very densely punctate throughout, the pubescence short and but slightly variegated, the transverse line and pale spots obsolescent; prothorax evidently less than half as long as the basal width, the very strongly converging sides almost straight; punctures fine but deep, even in size and extremely close; pubescence black, generally forming an elongate medial rhomboid of densely aggregated lines medially, variegated slightly though more sharply with pale fulvous anteriorly and sublaterally and more diffusely elsewhere; scutellum with dense and rather less decumbent black hairs; elytra nearly one-half longer than wide, parallel, the sides rounding through the parabolic tip in posterior third; pubescence close, black, more densely aggregated interruptedly on the alternate intervals, the transverse silvery bands as in *americanus*; abdomen finely but distinctly, closely asperulate, the metasternum more coarsely, deeply and closely asperato-punctate, with a smooth enlargement of the fine impressed median line just behind the middle. Length 7.1-7.25 mm.; width 4.2-4.3 mm. British Columbia. [*B. concolor* Kirby, —Richardson Faun. Bor. Am., IV, p. 117].....**concolor** Kirby

- A—Similar in general to the preceding but stouter and materially larger, similar in coloration and nearly so in sculpture and pubescence; head densely, rather deeply punctate, convex, not densely pubescent except in a small central subprominent aggregation, the impressed line represented by a short transverse flat punctureless spot, the pale points not evident; prothorax similar, except that the fine punctures are not so dense and become notably finer and closer medially; elytra nearly similar throughout; abdomen with the asperities stronger, though less definitely sharp, and sparser, bearing hairs which are a little coarser and distinctly longer than in *concolor*; metasternum more coarsely punctaturogose and without a definite smooth spot on the median line. Length (♂) 8.1 mm.; width 5.0 mm. Washington State.

pacificus n. subsp.

Mesosternal emargination broader, shallow.....9

- 9—Color deep black, the legs barely at all paler, the tarsi rufo-piceous; head rather well developed, convex, very densely punctured, the pubescence short, notably coarse, somewhat variegated, the transverse line and pale spots obsolete or nearly so; prothorax decidedly less than half as long as the basal width, the converging sides nearly straight, the punctures fine and very close; pubescence notably longer than usual, somewhat shaggy, black, variegated with fulvous, the black hairs forming some uneven condensed lines, the medial rhomboidal figure broad; scutellum densely nigro-pubescent; elytra short, not over a third to fourth longer than wide, rather rapidly rounding posteriorly and obtusely ogival at tip, the general pubescence very short, blackish, sprinkled with silvery, the dense condensations on the alternate intervals, formed of longer deep black hairs, tending to spread into an ill-defined spot at three-fifths and outside the median line, the transverse silvery bands rather finer and more feebly defined than usual; abdomen rather coarsely, densely asperato-

punctate, much more strongly than in the preceding or *americanus*, the metasternum coarsely, densely and rugosely punctate, with a somewhat impressed and partially impunctate post-central area on the median line. Length 7.8–8.4 mm.; width 4.8–5.25 mm. Illinois and Lake Superior (Bayfield). [*B. geminatus* Lec.,—Proc. Acad. Phil., 1854, p. 114]. ***geminatus* Lec.**

Color less deep black, somewhat picescent beneath, smaller in size and more broadly oblong-oval, more acute anteriorly, the head notably smaller, strongly, extremely densely punctate throughout, the impressed transverse line but feebly indicated as a less punctate streak, the pale spots well developed, cuneiform; pubescence very short, inconspicuous; prothorax unusually small, much less than half as long as the basal width, the very converging sides almost straight; surface finely, evenly and extremely closely punctate throughout, the vestiture not long but rather shaggy, black, much variegated with fulvous; elytra barely a fourth longer than wide, distinctly wider than any part of the prothorax, very obtusely ogival or parabolic at apex, densely and finely chagrined, the elongate condensations of black hairs on the alternate intervals widely separated and few in number, without indication of the black spot of *geminatus*, the transverse bands very irregular and formed of fulvous hairs; abdomen very finely, rather closely but feebly asperate, the metasternum rather less coarsely punctured than usual and very densely throughout, a very fine entire median line and the extreme posterior intercoxal angle alone smooth. Length 7.3 mm.; width 4.3 mm. Oregon.

***perditus* n. sp.**

Color deep black, the abdomen feebly picescent and the tarsi piceo-testaceous; antennæ wholly piceo-testaceous, short, the seventh joint but little wider than long, eight to ten transverse; form elongate-oval, convex, the head rather small, convex, deeply, densely punctate, with a fine transverse polished frontal line, the spots posterior thereto not distinct, the vestiture short, dense; prothorax a little less than twice as wide as long, the strongly converging sides feebly arcuate, the punctures fine, deep and close, the fine interstices shining; pubescence moderately long, dense, black, with a conspicuous design of fine pallid lines; scutellum densely nigro-pubescent; elytra fully a fourth longer than wide, parallel and feebly arcuate at the sides, evenly and broadly rounding conjointly in about apical third, very minutely, densely sculptured, but feebly shining, the coarse vestiture mostly black, with blacker condensations on the alternate intervals and sprinkled with silvery laterally, the anterior transverse pale band prominently rounded anteriorly at the suture; under surface densely sculptured throughout, the abdomen finely, rather closely and moderately strongly asperate and with numerous hairs which are fine and rather obscure in coloration. Length 6.8–7.0 mm.; width 3.9–4.0 mm. Manitoba (Aweme),—Norman Criddle.

***criddlei* n. sp.**

Color dark piceous, the legs paler, piceo-rufous, the antennæ entirely rather pale piceo-testaceous, except the blackish basal joint; form much more elongate, narrower and more parallel than in *geminatus*

and *perditus* with the size materially smaller, more parallel and less convex than in *criddlei*; head moderately developed, densely punctate, the transverse inter-ocular line represented only by its two subfoveiform extremities; prothorax nearly half as long as its basal width, of the usual form but with the median line distinctly canaliculate throughout the length, the punctures everywhere minute and very close; vestiture moderate in length and density, the fulvous hairs predominating and forming a few more condensed lines, two of which inclose an irregular median rhomboid; scutellum with dense brownish-black hairs; elytra nearly one-half longer than wide, parallel, with feebly arcuate sides, the latter rounded and converging in apical third to the obtusely sublobiform apex; pubescence short, coarse, not dense, dark brown, but little variegated by darker condensation on the alternate intervals, the crescentiform area inclosed by very feebly defined pale fulvous spots and unusually large, its sutural length two-fifths as long as the suture; abdominal asperities small but strong, moderately close. Length (♂) 7.0 mm.; width 3.9 mm. Labrador (Nain).....**torpidus** n. sp.

- 10—Abdomen strongly, closely and very confusedly punctato-rugose, the basal segment coarsely punctate medially. Form more narrowly oblong-oval, not very deep black throughout; head moderately developed, convex, strongly, densely punctate, the transverse line and pale spots obsolescent. the pubescence rather abundant, coarse, fulvous and black, conspicuous; prothorax evidently less than half as long as the basal width, the sides only moderately converging and nearly straight, the punctures small but deep and perforate, becoming gradually somewhat smaller and closer medially, the surface everywhere rather shining, the vestiture rather coarse, variegated; scutellum densely nigro-pubescent; elytra rather more than a fourth longer than wide, parallel, almost evenly rounding in about apical third, the short vestiture rich dark fulvous in color, the alternate intervals with dense and more blackish vestiture, the two inner vittæ scarcely at all broken; metasternum strongly, densely punctate throughout, except a small elongate smooth spot on the median line just behind the middle, the median smooth line not indicated; mesosternal sinus shallow. Length 6.0 mm.; width 3.5 mm. Oregon.....**callidus** n. sp.

Abdomen with fine and more distinct asperate punctulation, the basal segment never more than rather finely punctate medially; form much more broadly oval..... 11

- 11—Form rather short, oblong-oval, very convex, black, the under surface and legs just visibly picescent; head rather small, convex, densely punctate, inconspicuously pubescent, the transverse line obsolete but with three small shining spots in short transverse line between the eyes; prothorax formed nearly as in the preceding and with rather long black vestiture, which forms a few linear aggregations, the medial elongate rhombus distinct, the paler hairs very few and inconspicuous, the punctures fine and dense; elytra about a fifth longer than wide, parallel and feebly arcuate at the sides, very obtusely rounded in about apical third, the hairs abundant, almost entirely black, the

black condensations of the alternate intervals narrow and not contrasting so greatly as in the preceding, the transverse pale lines extremely feebly defined, the hairs forming the spots scanty, densely punctate; metasternum with a fine smooth and even median line, the mesosternal sinus shallow. Length 5.8 mm.; width 3.7 mm. Wyoming (Laramie) and Manitoba (Aweme)... *laramiensis* n. sp.

Form nearly as in the preceding but still stouter, deep black throughout, the legs not distinctly picescent; head nearly as in the preceding throughout but with still shorter, blacker and less evident pubescence; prothorax nearly similar in form and sculpture but rather larger, with the pubescence notably shorter, more even and scarcely at all variegated, the black pairs scarcely at all linearly aggregated; elytra slightly more than a fifth longer than wide, nearly as in the preceding but with the black pubescence shorter, scantier and with the condensations on the alternate intervals much less marked and less prominent, the transverse silvery bands feeble, irregular, the figure inclosed being much more than twice as wide as long; asperulate punctures of the abdomen very fine but distinct, well separated among themselves, each bearing a very short but unusually thick yellowish-silvery glistening hair, the closely and rugosely punctured metasternum similarly clothed; mesosternal sinus rather deep, only a third as wide as the anterior margin of the mesosternum. Length 6.0 mm.; width 3.85 mm. Wisconsin (Bayfield),—Wickham.

rigens n. sp.

12—Elytra with a transverse figure, formed by nearly similar transverse bands, sinuate posteriorly. Oval, subacute anteriorly and posteriorly, convex, black, the pubescence olivaceous, the pronotum variegated with cinereous; elytra subtessellate with black and cinereous, with a pale transverse maculation crossing the suture near the middle; antennæ and tarsi rufo-piceous, the former with the last joint subacuminate. Length 5.5 mm. Lake Superior (northern shore). [*B. eximius* Lec.,—Agassiz, Lake Superior, 1850, p. 224].

eximius Lec.

Elytra with a very indistinct closed transverse crescentiform space, the transverse bands fine, very incomplete but of the same nature as in *americanus*, the anterior sutural part slightly more distinct. Elongate-oval, parallel, black, the tarsi rufo-piceous; head well developed, moderately convex, strongly, very densely punctate, with a mixture of blackish and fulvous, very coarse hairs and a fine impunctate transverse submedial line; prothorax of the usual form, finely, deeply, densely punctate, the pubescence unusually long, coarse, fulvous and blackish, much though indefinitely variegated; scutellum densely clothed with black and a few fulvous hairs; elytra fully a fourth longer than wide, very obtuse at apex, parallel or perhaps very faintly posteriorly inflated, the sides nearly straight in basal two-thirds; pubescence not very short, coarse, bright fulvous-yellow and blackish indiscriminately mingled, the alternate intervals with elongate areas of more condensed blackish hairs; abdomen shining, finely but strongly, closely, asperately punctate, the hairs very short, fine and inconspicuous; metasternum strongly,

closely punctate, with a fine impressed median line in posterior half. Length (♂) 6.3 mm.; width 3.75 mm. Colorado (Leadville),—Wickham.....**canterius** n. sp.

Elytra without a closed common crescentiform figure; outline more elongate. 13

- 13—Form elongate-oval, more produced and pointed posteriorly than anteriorly, black throughout, the antennæ black with a feeble piceous tinge; head rather coarsely, very deeply and densely punctate, with rather coarse pubescence which is slightly variegated; prothorax distinctly less than half as long as its basal width, the strongly converging sides somewhat swollen and arcuate basally, compressed anteriorly, the punctures minute, deep and very dense, the pubescence longer than usual, very coarse, black, much variegated by aggregated lines and patches of fulvous, the scutellum with coarse, dense, almost wholly black hairs; elytra one-half longer than wide, parallel, the sides feebly arcuate, becoming gradually rounded and converging in apical two-fifths, the apex rather narrowly parabolic and somewhat produced; surface extremely densely opaque, the hairs coarse, black, interspersed plentifully with fulvous, with a small transverse solid transverse spot of yellow-cinereous hairs at the middle of the suture and a small one at each side in nearly the same line, at about lateral third; alternate intervals with denser, almost wholly black hairs; abdomen strongly and closely but somewhat finely asperate, the metasternum more coarsely, very densely and rugosely punctate, the hairs very short but rather coarse, well separated. Length 6.3 mm.; width 3.5 mm. Idaho (Cœur d'Alene),—Wickham.**centralis** n. sp.

Form nearly similar but less produced and more evenly rounded behind, smaller in size, almost similar in coloration and general nature of the variegated vestiture; head small, convex, very densely punctate; prothorax nearly as in *centralis* but less compressed apically and with less minute and not quite so dense sculpture, the vestiture nearly similar; elytra not more than a third longer than wide, parallel and feebly arcuate at the sides, the latter evenly and more broadly rounding behind from well behind the middle; surface less densely punctate and slightly shining, the vestiture rather shorter, coarse, black, with interspersed fulvous hairs, the alternate intervals with shorter black condensations, the fulvous hairs tending to form several posteriorly arcuate transverse common bands, the solid yellowish spot at the middle of the suture transversely rhombiform; abdomen similarly but less densely asperate. Length 5.3 mm.; width 3.0 mm. Colorado. (Leavenworth Valley,—10000 to 11000 feet elevation),—Wickham.**explicatus** n. sp.

- 14—Elytral striæ as usual, fine but continuous. 15

Elytral striæ very feeble, discontinuous, sometimes much interrupted. .18

- 15—Form stout, oblong-parallel or very nearly parallel, very broadly obtuse behind. 16

Form parallel and oblong-elongate, obtusely rounded behind, much narrower and smaller in size. 17

- 16—Deep black throughout, the antennæ black, picescent toward base



of the funicle; head well developed, densely, rugosely punctate, the transverse line and two spots very feeble; pubescence brown but inconspicuous; prothorax of the usual form, distinctly less than half as long as the basal width, feebly compressed anteriorly, the sides from above very feebly arcuate basally; surface evenly convex, alutaceous, the punctures even, small, deep and perforate, separated by nearly twice their own widths; scutellum with dense, coarse, brownish-black hairs; elytra a little wider than the prothorax, only a fifth longer than wide, the parallel sides feebly arcuate, the apex very broadly rounded in posterior third; surface dull, minutely, closely punctate, the pubescence short, not dense, wholly pale fulvous, with a few silvery hairs intermingled, longer and dense along the middle of the alternate intervals in detached lines and spots; abdomen shining, with very fine, feeble and well separated asperities, the metasternum in great part strongly punctato-rugose, the pubescence of the under surface fine, very short and inconspicuous; emargination of the mesosternum broad and shallow. Length 7.6-8.0 mm.; width 4.7-5.0 mm. Oregon. **fulvovestitus** n. sp.

Deep black, slightly narrower and still more parallel, the pubescence very coarse and unusually long; head with the dense sculpture finer, the pubescence more conspicuous, pale brown and cinereous; prothorax nearly similar in outline but with the fine perforate punctures everywhere much denser, the vestiture rather long, coarse, decumbent, dense and almost unicolorous, pale yellowish-brown; scutellum with coarse, dense, rather darker brown hairs; elytra just visibly widest at about posterior third, basally not distinctly wider than the prothorax, the sides nearly straight, the apex very broadly rounded in posterior third; minute punctures very dense, the vestiture long, dense, coarse, pale yellowish-cinereous throughout, except on the alternate intervals where it becomes still longer, denser, still more heaped up and darker brown in detached spots, which are small in size and irregular in form; abdomen strongly, closely asperato-rugulose, with rather close-set and coarse, subfulvous hairs, longer and much more conspicuous than in *fulvovestitus*, the metasternum closely, coarsely and distinctly though rather roughly punctate, the mesosternal sinus deeper than in the preceding. Length 7.7 mm.; width 4.7 mm. Washington State (Palouse).

stolidus n. sp.

- 17—Elongate, parallel, deep black, the tarsi piceous-black; head rather finely, very densely sculptured, the transverse line represented by its impressed ends and a small median smooth point, the pubescence moderate; prothorax scarcely less than half as long as its basal width, of the usual form, feebly shining, the perforate punctures moderately fine and close, separated by but little more than their own widths, becoming extremely fine and much closer medially and rather notably coarse and closer on the very steep flanks; pubescence short, pale fulvo-cinereous, largely denuded in the type; scutellum with dense, radiating, coarse dark fulvous hairs; elytra oblong, a fourth longer than wide, scarcely wider than the prothorax and only about two and one-half times as long, very

broadly rounded behind in apical third; surface opaque, extremely finely, densely chagrined throughout, the punctures not distinct; vestiture very short, not very dense, almost perfectly even in distribution, fulvous in color, becoming faintly cinereous on the flanks; abdomen shining, finely, feebly and not very densely asperulato-rugulose. Length 6.8 mm.; width 3.85 mm. New Hampshire (near the summit of Mt. Washington).....*difficilis* n. sp.

- 18—Very broadly oblong-oval, rather shining throughout above and more so beneath, deep black throughout; head closely, deeply, distinctly and densely punctate, the anterior margin tumid, and, immediately behind the ridge, transversely impressed, the impression broadly interrupted at the middle, the central short transverse line impressed and evident; prothorax not quite half as long as the basal width, of the usual form, the punctures very fine, deep, even throughout and extremely close-set, separated generally by less than their own widths; pubescence denuded in the type, except a few short pale hairs on the flanks; elytra evidently wider than the prothorax, only a fifth or sixth longer than wide, parallel, very broadly, circularly rounded in about apical third; surface finely but very distinctly, evenly and closely punctured throughout, irrespective of the stria intervals, the latter not differing at all among themselves, the striae fine, consisting of irregular series of fine linear detached portions, becoming more nearly entire and stronger on the flanks; pubescence wholly denuded in the type, except a few very short silvery hairs along the lower part of the flanks; abdomen finely, closely and rather strongly asperate, the metasternum with only moderately large and well separated punctures which are rugosely confluent laterally, the mesosternal sinus shallow. Length 6.9 mm.; width 4.3 mm. British Columbia (Donald),—A. G. Smith.

egenus n. sp.

- 19—Form stout, inflated posteriorly, blackish-brown in color, very dull in lustre, the tarsi rufo-piceous, the antennae dusky testaceous, the basal joint black; head finely, very densely punctato-rugose, the median part posteriorly somewhat elevated and deplanate, the vestiture very short, abundant and coarse; prothorax longer and narrower than usual, fully half as long as the basal width, of the usual form, the punctures small but deep and extremely dense throughout; pubescence rather short, coarse, dense, brownish-black, slightly variegated with a few small cinereous hairs, the darker hairs also aggregated into a few irregular lines; scutellum densely, coarsely pubescent, brownish-black; elytra barely a sixth longer than wide, at base scarcely, behind the middle much, wider than the prothorax, very broadly and obtusely rounded behind, the sides anteriorly nearly straight; pubescence very short, dense, coarse and dark fulvous, condensed into more blackish vittæ on the alternate intervals and with a transverse blackish spot posteriorly toward the sides, the transversely lunate figure rather short, composed of silvery-white spots, the anterior line anteriorly angulate medially; punctures minute but distinct, everywhere extremely dense; abdomen finely, closely and rather strongly asperate. Length 7.8 mm.;

width 4.75 mm. Lake Superior. [*B. picipes* || Kirby,—Richardson, Faun. Bor. Am., IV, p. 116; *B. kirbyi* Lec.,—Pr. Acad. Phila., 1854, p. 114].....**kirbyi** Lec.

Form stout, less inflated behind but almost similar though much smaller, deep black above, piceo-rufous beneath; head nearly similar but less parallel behind the eyes, very densely sculptured, the posterior subelevated flattened area indistinct; prothorax much shorter, distinctly less than half as long as the basal width, of the usual outline, the punctures less minute than in *kirbyi* but almost equally dense, the narrow interspaces more shining, the vestiture rather longer, coarse, blacker, aggregated into a few more prominent streaks and slightly variegated with small fulvous areas; scutellum relatively larger, densely clothed with coarse and deep black hairs; elytra similar in general form though not quite so inflated posteriorly, equally broadly rounded behind, the surface opaque, with extremely dense, minute and scarcely distinguishable punctures, the vestiture short, dense, not fulvous but blackish-brown, largely interspersed with single silvery hairs on the flanks, with condensed black vittæ on the alternate intervals, the second and third transversely united near basal third of the elytra, the transverse black subposterior spot toward the sides transverse; lunate inclosure in the type very indistinct, marked principally by more even short pubescence than the rest of the surface, the defining spots very minute, sparse and composed each of a very few yellowish-cinereous hairs; entire under surface very closely punctate and asperate, with the hairs short but coarse, close and conspicuous. Length (♂) 6.5 mm.; width 3.8 mm. Colorado (Leadville),—Wickham.....**vafer** n. sp.

Form much more elongate than in either of the two preceding, though very sensibly inflated posteriorly, black throughout, the tibiæ and tarsi and sometimes the under surface very feebly picescent; head almost evenly convex, strongly, very densely punctate and with short, close and very coarse hairs, the two ocellæ-like spots distinct but black, observed under high power to be impunctate but finely, feebly chagrined; prothorax well developed, distinctly less than half as long as the basal width, somewhat compressed apically, the sides thence broadly diverging and feebly arcuate to the very acute basal angles; surface finely but distinctly, deeply, very closely punctate, with shining thin interspaces, the pubescence rather long, black, with indistinctly fine aggregated lines and very slightly variegated with cinereous; scutellum densely velvety-black; elytra about a fourth longer than wide, evenly, subcircularly rounded behind in barely apical third, the surface finely, very densely punctate, the short blackish-fulvous pubescence abundant, the blacker aggregated vittiform areas smaller, fewer and much less evident than in the two preceding, the subposterior lateral black area evident, the enclosed transverse lunate area very indistinct, in the form of an almost even chevron, the defining spots of cinereous hairs small, sparse and evanescent; under surface dull, very densely sculptured throughout and covered rather closely with short and only moderately coarse

plumbeous hairs. Length 6.6–7.2 mm.; width 3.7–4.2 mm. Idaho (Cœur d'Alene),—Wickham.....*wickhami* n. sp.
 Form and general characters nearly as in *wickhami* but larger and stouter, still less evidently inflated posteriorly and much less so than in *kirbyi*, deep black throughout, the under surface and legs not paler; upper surface nearly as in *wickhami* throughout, except that there is a notable admixture of fulvous hairs that do not appear in that species, especially noticeable on the pronotum and toward the sides and on the posterior slope of the elytra; vestiture throughout a little longer and coarser than in *wickhami*; under surface similarly very densely and strongly sculptured throughout and with the numerous short fulvo-cinereous hairs coarse and conspicuous; punctures of the metasternum distinctly more isolated among themselves than in the preceding species. Length 7.7 mm.; width 4.7 mm. British Columbia (Aldermere),—communicated by Mr. Keen.
consuetus n. sp.

Most of the species proposed above seem to be very well defined and not subject to much doubt,—that is, if the limits of variability disclosed in those few instances where it has been possible to study series of specimens hold true for all. The longitudinal distance separating the irregular transverse pale bands of the elytra is rather variable as a rule, and whether those forms given in the table as wholly unfasciate are constantly so or not cannot be conjectured, though this would seem to be highly probable. *Neglectus* is without much doubt a valid species, distinct from *americanus*, but my single specimen is in very poor condition, being almost entirely denuded; possibly *brunnescens* may be a subspecies of *americanus* rather than *neglectus*. The transverse subposterior lateral black spot so characteristic of the posteriorly inflated *kirbyi* section, is also evident in *geminatus*, and, besides the more developed pubescence, this species is distinguishable from *americanus*, which it otherwise much resembles, by the stronger and denser abdominal sculpture. *Egenus* is a very aberrant species and it is unfortunate that my only specimen, as in the case of *Cytilus nigrans*, should be almost completely denuded and bald on the upper surface throughout, as the pubescence would doubtless have a different type-form from that prevailing elsewhere. *Perditus*, represented by two mutually similar examples, is a peculiar species, having an unusually small head; I have placed with it two other forms which evidently differ, but which are rather too indefinite or too imperfect to describe; one, unlabeled in the Levette cabinet, represented by two

specimens, is more broadly oval, has a larger head and much stronger, denser abdominal sculpture, the other is labeled California. *Concolor* Kirby, given as a synonym of *cyclophorus* in the Henshaw list of Coleoptera, has no such status, being a perfectly distinct species.

Porcinolus Muls.

The type of this genus, *murinus* Fabr., is a small species, much inferior in stature to the smallest *Byrrhus*, with which it was confounded by Melsheimer and LeConte, possibly because of the somewhat similar style of ornamentation; it is more properly associable with *Curimus* and *Syncalypta*, as shown by the short erect bristles of the upper surface, among other features. The first of the two following species differs from *murinus* chiefly in its larger size, very much more broadly rounded outline and longer and more conspicuous erect bristles; the second is more like *murinus* but has longer erect bristles and relatively very much more elongate elytra:

Form very broadly, evenly elliptical, convex, black, the legs feebly rufopiceous; erect bristles of the upper surface claviform, very numerous, irregularly but evenly distributed and about half as long as the width of the scutellum; head evenly convex, very densely and rugosely punctate, with a smoother transverse line at the middle of the vertex, the pubescence very short, coarse and close; prothorax slightly less than half as long as its basal width, in outline as in *Byrrhus*, extremely minutely, subasperately and not densely punctate, the general surface shining where exposed, the pubescence short, coarse, dark and sublineate in part, much variegated with paler; scutellum densely nigro-pubescent; elytra scarcely at all longer than wide, with arcuate sides, gradually converging from slightly behind the middle through the narrowly rounded apex; surface very finely and simply striate, densely clothed with short, coarse, dark cinereous hairs, becoming broadly condensed and blackish along the alternate intervals and with a transversely lunate common area, inclosed by broad and somewhat broken lines of confluent spots, formed by pale cinereous hairs, the two lines uniting at lateral fourth and basal third; abdomen finely, feebly, not densely sculptured basally, becoming very coarsely, densely and rugosely so apically, the sutures all very coarse and deep; metasternal punctures well separated medially, dense laterally. Length 4.25 mm.; width 3.0 mm. Kansas (Baldwin). *crescentifer* n. sp.

Form narrower than in the preceding and smaller in size, very evenly oval, more nearly like the European *murinus* but with much longer and rather more numerous erect claviform bristles, deep black throughout, the punctures of the head and pronotum rather coarse,

moderately separated, with the interspaces where visible polished and without minute sculpture, the elytra with fine striæ, the broad flat intervals smooth, polished and almost punctureless, the entire upper surface very densely clothed with short, coarse, subsquamiform hairs, with conspicuous blackish bristles interspersed, the vestiture generally blackish, with condensed black vittæ on the alternate intervals of the elytra, the latter also with a transversely lunate area inclosed by pale bands nearly as in the preceding; prothorax rather short; elytra notably long, three and one-half times as long as the prothorax, evenly elliptic in outline; under surface, with coarse, close sculpture, the metasternum with the coarse transverse punctures coalescent anteriorly but isolated posteriorly, the rather slender erect stiff hairs of the abdomen attached each at the posterior margin of a flat tubercle, the latter large and strong throughout on the last segment, giving an eroded appearance, the tubercles moderately separated, the interspaces granulato-reticulate. Length 3.7-3.8 mm.; width 2.25-2.3 mm. Manitoba (Aweme),—Norman Criddle *hystrix* n. sp.

In the European *murinus*, as represented by a German specimen at hand, the abdominal sculpture is stronger and denser throughout and the hairs of the under surface are shorter, more decumbent and more squamiform than in either of the above species; the bristles of the upper surface are less numerous and scarcely more than half as long. The dimensions of this European example are 3.7×2.3 mm., which coincide very nearly with the proportional dimensions ($2\frac{1}{5} \times 1\frac{1}{3}$ l.) given by Melsheimer (Pr. Acad. Phila., 1844, p. 117) for his *Byrrhus undatus*, of which *glabellus* Mels. (l. c., p. 118) is a synonym—both described as Pennsylvanian. If *undatus* Mels., is really the same as *murinus* Fabr., the latter will have to be listed in our catalogues, but not having seen a specimen I am unable to decide; *undatus* and *glabellus* may possibly have been founded upon accidental importations, which failed to establish the species here, though the genus *Porcinolus* is not only endemic, as indicated by the two quite different species above described, but is probably much more developed here than in Europe. Possibly *hystrix* may be the same as *undatus* Mels., but of this I have no means of judging.

Curimopsis Gangl.

The species of this genus inhabiting North America are recorded in our lists under the name *Syncalypta*, and, though placed as a subgenus of the latter in the European catalogue, I think the differences are sufficiently pronounced to compel its recognition

as a distinct genus. Although very poorly represented in our collections, this is probably not so much because of rarity as it is owing to their obscure coloration, the frequent coating of earthy matter and the habit of feigning death very persistently. My collection includes only three specimens, representing three different species. The six species known may be defined as follows:

Outline regularly oval in form.....2
Outline oblong-suboval, more parallel and subrectilinear at the sides medially.....4

2—Elytra with many small distinct spots of condensed silvery scale-like pubescence. Oval, attenuated before and behind, convex, black, fusco-squamulate, hispid with erect blackish-piceous bristles, which are shorter and less numerous than usual; head and prothorax densely punctate, the latter more coarsely and densely than in *echinata*; elytra with fine striæ, the sutural posteriorly and the external deep. Length 2.75 mm. Washington State,—Ulke. One specimen. [*Syncalypta albonotata* Lec.,—Proc. Acad. Phila., 1861, p. 344].

albonotata Lec.

Elytra diffusely variegated with larger, more irregular patches of pale squamiform decumbent hairs. 3

3—Form broadly oval, pointed behind, convex, rather shining, the condensed patches of paler squamiform pubescence more distinct posteriorly, black, the erect bristles long, blackish and numerous; head and prothorax rather coarsely, moderately closely punctate, the elytra not longer than wide, rather acutely rounded and feebly lobate at apex, the striæ faintly impressed, obsolete and formed of series of widely spaced punctures except posteriorly and laterally, converging toward the more impressed sutural posteriorly as in *Simplocaria*: surface finely, remotely punctate and shining; under surface shining, with rather coarse, well spaced, perforate punctures which are smaller on the duller abdomen. Length 2.3 mm.; width 1.6 mm. District of Columbia. [*Simplocaria strigosa* Mels.,—Proc. Acad. Phila., 1844, p. 118—Georgia].....**strigosa** Mels.

Form more elongate, evenly oval, convex, black, dull in lustre, the erect bristles long, claviform, numerous, seriate in arrangement; head and prothorax with only moderately coarse, rather close-set punctures; elytra fully a fifth longer than wide, the sides evenly rounded and gradually converging posteriorly from near the middle, the apex rather acute; surface closely, coarsely punctato-scabrous throughout, the striæ fine and distinct to the base, the sutural strong posteriorly, the others not so directed upon the sutural posteriorly as in *strigosa*, the patches of denser squamiform decumbent hairs more distinct and visible throughout though confused; under surface duller, the punctures rather fine and close-set. Length 2.4 mm.; width 1.6 mm. Lake Superior (Marquette and Eagle Harbor). [*Syncalypta echinata* Lec.,—Agassiz, Lake Superior, p. 224].

echinata Lec.

- Form briefly oval, smaller in size, convex, black throughout, fuscosquamulate, not maculate, interspersed with longer erect black claviform bristles; prothorax feebly compressed anteriorly at the sides; elytra subequally striate, the sutural stria somewhat deeper posteriorly. Length 2.0 mm.; width 1.5 mm. Alaska (interior of the Kenai Peninsula—a single specimen). [*Syncalypta setulosa* Mann.,—Bull. Mosc., 1853, p. 216]. **setulosa** Mann.
- 4—Ovate, convex, more pointed behind, the sides of the elytra parallel from the base to beyond the middle, black, densely clothed with brownish-gray scales and but slightly mottled; bristles rather long, clavate as usual. Length 2.5 mm. Colorado (Garland). A single specimen. [*Syncalypta grisea* Lec.,—Bull. U. S. Geol. and Geog. Surv., 1879, V, p. 514]. **grisea** Lec.
- Oblong-oval, black, the surface with an incrustation of dark foreign matter but shining where exposed, the bristles claviform, numerous, moderate in length, fuscous and somewhat unevenly serial in arrangement; prothorax relatively unusually short, with moderately large and not very dense punctures, the converging sides rather strongly arcuate; elytra fully a fourth longer than wide and much more than three times as long as the prothorax, the sides gradually converging and rounded behind to the notably acute apex, the striae visible and sensibly impressed throughout, the dark crust concealing any possible maculation of condensed scales, the surface where exposed scarcely at all punctured, smooth and shining; under surface moderately shining and with rather small, somewhat close-set, deep punctures. Length 2.5 mm.; width 1.5 mm. Washington State. A single specimen. **brevicollis** n. sp.

Melsheimer gave a short and very insufficient diagnosis (Proc. Ac. Phila., 1844, p. 117) of a "*Syncalypta hispidus*" (!) as castaneous, fusco-hispid, the antennæ and feet red-brown; head blackish, somewhat wrinkled, very finely and distantly punctured; prothorax punctured like the head; elytra darker than the prothorax, glossy, with very fine vicinal punctures; under surface glabrous. Length 3 mm. Pennsylvania. This is not alluded to by LeConte in his synopsis of the Byrrhidae (l. c., 1854, p. 113) and I do not know whether or not it has ever been identified; it is certainly not a member of the present genus. The lack of agreement of the specific word in gender would lead one to suppose that the author had originally assigned it to some other genus and had failed to change the gender ending.

Tribe EXOMINI.

This tribe seems to be necessitated by a minute species, representing a local development peculiar to the northwestern coastal region of North America; its aberrant features concern principally

the mesosternal and epipleural structure, as well as the deeply sulcate elytra.

Exoma Csy.

The body is very small in size, strongly convex, of a generally oblong-oval form, more acute behind. The head has the clypeal suture wholly obsolete, the anterior margin evenly arcuate, with the edge thin and slightly reflexed, the antennæ nearly as in *Curimopsis*, the 3-jointed club being gradually broader from its base; the mesosternal pit occupies the entire intercoxal portion of the mesosternum; the abdomen is relatively rather small, with distinct, equal and perfectly transverse sutures. The epipleura are broad anteriorly and but slightly hollowed at base for the retracted legs; at the posterior limit of the metasternum they terminate abruptly, the marginal line extending obliquely upward—as seen by lateral view—as well as outward and thence posteriorly wanting, being coincident with the lower elytral edge. This structure of the epipleura, the broad anterior part ending abruptly behind in a truncature, recalls that of *Trinaria* as described before, but in that genus the edge of the elytra posterior thereto is in the same line as the anterior outer edge and is not superior to it in plane as it is in *Exoma*. The legs are retractile but not so strongly as in the preceding tribe, resembling more nearly the Simplocariini in this respect. The scutellum is notably small and rather convex and the deep, equal and entire elytral sulci have no tendency to join the sutural before the apex as they do in *Simplocaria* and *Curimopsis*. The single species is the following:

Moderately stout, very convex, strongly shining throughout, black, the prothorax slightly, the legs pale, testaceous; head smooth, finely, sparsely punctate, the sparse setæ short, recurved and squamiform; prothorax twice as wide as long, the strongly converging sides sensibly arcuate from above; surface smooth and polished, with remote and minute subasperate punctules, each bearing a rather short coarse and stout recurved seta; scutellum very small, much longer than wide, very acute, convex and nude; elytra barely as long as wide, as wide as the prothorax, widest, somewhat inflated and with rounded sides near basal third, thence rapidly narrowed and with more feebly arcuate sides to the rather acutely rounded apex, very steeply declivous posteriorly; sulci very coarse and deep, the intervals convex, smooth and polished, each bearing a single series of short stiff palish hairs, which are coarse and so strongly curved that their tips are nearly bent back upon the surface, forming a semi-

circle; each is attached in a minute and scar-like, feebly asperate punctule; abdomen micro-reticulate but not distinctly punctate, with some scattered hairs; metasternum short, with some rather coarse, moderately close punctures; its anterior margin, along the mesosternal pit, elevated and cariniform. Length 1.5–1.6 mm.; width 0.9–1.0 mm. British Columbia (Metlakatla),—Keen. [*E. pleuralis* Csy.,—Can. Ent., 1908, p. 282]. **pleuralis** Csy.

In my original description the language “free though retractile,” in referring to the legs, is intended to mean that the anterior legs when retracted are not deeply sheltered as they are in the preceding tribe and especially in *Curimus*, *Syncalypta* and many other types, being in fact more like those of *Simplocaria*.

Subfamily LIMNICHINÆ.

The radically different method of protecting the antennæ in repose is an ample reason for treating the numerous very small species of the *Limnichus* group as a subfamily, instead of a simple tribe; but there are other important reasons also, such as the different habits and the generally distinct epistoma or clypeus. There are two tribal groups included within the scope of the definition previously given for the Limnichinæ, which may be defined as follows:

Pronotum without cavities for the antennæ in repose; antennæ with the funicle comprising joints three to six or eight very slender and cylindrical. LIMNICHINI

Pronotum with polished sublateral cavities for the shelter of the distal parts of the antennæ in repose; antennæ stout basally, thence gradually tapering to the neighborhood of the club; body very minute.

BOTHRIOPHORINI

The second of these two tribes consists at present of but few species, while the first includes numerous species as well as many genera. Both tribes are native to the palæarctic and nearctic faunas and the Limnichini extend at least as far to the southward as Panama.

Tribe LIMNICHINI.

The numerous genera of this tribe, which is more developed and diversified in the new than in the old world, may be differentiated readily as follows:

Antennæ not partially sheltered in repose within posterior cephalic depressions, but usually placed in close contact with the sides and base, sometimes apparently free; pubescence forming a single system; epistomal suture very fine and feeble to obsolete, never groove-like. . . 2

Antennæ partially sheltered in repose in slight sublateral basal depressions on the upper surface of the head and slightly under the anterior edge of the pronotum, blackish and dense in substance, the club gradual, rather compact and 3-jointed; eyes vertical in plane; pubescence dual, consisting of very short appressed hairs, with others longer and more erect intermingled; elytral punctures generally somewhat serial basally; epistomal suture rather coarse and sulciform.....7

- 2—Eyes very convex and prominent, rather coarsely faceted and conspicuously visible from a vertical viewpoint, the sides of the front above them not acute or cariniform; anterior part of the front abruptly more declivous, subvertical, the very coarse sculpture obliterating the epistomal suture; antennæ inserted within open foveæ at the ends of the epistomal suture before the eyes, the base not concealed from above; prosternum sulcate; sculpture of the body coarsely cribrate as a rule. [Type *Limnichus punctatus* Lec.]. Nearctic to neotropical.

Limnichites

Eyes vertical in plane and more or less finely faceted, the edges of the front above them acute and projecting, almost wholly concealing them from a vertical viewpoint; upper surface of the head more gradually declivous anteriorly. 3

- 3—Antennæ blackish and denser in substance; surface sculpture more pronounced as a rule, the body generally less attenuate posteriorly. 4

Antennæ fragile, paler, apparently free, the club long and very loose; prosternum sulcate; body more acutely pointed behind.....6

- 4—Prosternum sulcate; sculpture of the front usually strong and longitudinally coalescent, generally obscuring or obliterating the epistomal suture, the epistoma transverse, broadly rounded; antennæ with the outer joints closely joined, truncate, the last joint large, inserted under the oblique acute sides of the front, the base concealed from a dorsal viewpoint, the emarginations indicating the ends of the epistomal suture very small; body rather obtuse behind, with moderate sculpture. [Type *Limnichus obscurus* Lec.]. Nearctic and Sonoran.**Eulimnichus**

Prosternum not at all sulcate; sculpture rather feeble, that of the head not conspicuous, the epistomal suture fine but evident, the epistoma broadly rounded; antennæ inserted within large sinuses before the eyes and behind the lateral part of the epistoma, their base not concealed from above, much longer and more loosely articulated than in *Eulimnichus*, the outer joints much less rapidly and usually only feebly enlarged, with the apices of the joints acuminate and not truncate; body more pointed behind as a rule 5

- 5—Acute side margins of the prothorax ending anteriorly in a rather prominent angle at some distance behind the apex, the sides thence to the apex obtusely rounded in section and not produced; hypomera with a broad flat and slightly elevated inner margin; epistomal suture very fine but evident, slightly tumescent; epistoma thickened at the sides. [Type *Limnichus versicolor* Watl.]. Palæarctic.

***Pelochares**

Acute side margins of the prothorax continuous to the apex, the latter somewhat produced and rather finely acute from a dorsal viewpoint; hypomera without trace of the inner flat margin of *Pelochares*, continuous to the suture separating it from the prosternum and its epipleura; groove along the elytral side margins finer; epistomal suture extremely fine and feeble, barely evident, the epistoma not at all thickened laterally; antennæ of the same general type but with the outer joints less elongate, with their apical prolongations less acute. [Type *L. tenuicornis* Csy.]. Nearctic of the Pacific coast. **Lichminus**

6—Antennæ very pale yellow, the first two joints thick, third to eighth slender, the last three slender and elongate-oval, loosely connected, pubescent; body ovate, somewhat as in *Atomaria*, sparsely clothed with short and erect recurved hairs. [Type *P. atomarius* Shp.]. Neotropical. ***Phalacrichus**

Antennæ pale, slender, the first two joints larger, the second transverse and somewhat oblique, third to sixth slender and cylindric, the third and fourth the shortest, the outer five joints forming a long slender compressed and very feebly and gradually enlarged club, with the joints fully as wide as long, broadly truncate at tip and bristling with long hairs, the eleventh rounded; body ovate, pointed behind, sparsely clothed with short recurved hairs; converging sides of the front before the eyes acute and unbroken, concealing the antennal insertion from above, the epistomal suture very fine but evident, sinuate; posterior trochanters angulate. [Type *L. colonica* n. sp.]. Neotropical. ***Limnichalia**

7—Prosternum broader, evenly convex; antennæ inserted in small exposed lateral foveæ just behind the lateral part of the epistoma and not far in advance of the eyes, the sides of the front without the prominent edge of the preceding genera and with a large transverse impression just behind the antennæ; scutellum elongate and very acute. [Type *L. sericeus* Duft.]. Palearctic. ***Limnichus**

Prosternum sulcate; antennæ, sides of the front and antennal insertion as in *Limnichus*, but with the latter much more distant from the eyes, the lateral impression behind them smaller and more acutely impressed; scutellum broader, equilatero-triangular or very nearly. [Type *Limnichus ovatus* Lec.]. Nearctic to neotropical.

Limnichoderus

In the treatment of the Central American species Dr. Sharp has adopted too broad an interpretation of *Eulimnichus* and has mingled with some that are evidently true *Eulimnichus* a number of other elements; *sublævis*, for instance, and possibly *ephistemus* as well, is a member of the essentially tropical genus *Limnichalia*, described as new below, and the *Eulimnichus confertus* and *admirandus* of Sharp, almost certainly belong to *Limnichites*, a genus very distinct from *Eulimnichus* in the structure of the front and eyes, as well as in the remarkable cribrate sculpture of the body.

Lichminus is rather closely allied to *Pelochares* Muls., but differs rather strikingly in the structure of the lateral and inferior parts of the prothorax as detailed above. *Phalachrichus* Sharp and the closely allied *Limnichalia* are the least aberrant of the four purely tropical genera of the Limnichini now known. *Limnichus* Latr., and *Limnichoderus* constitute a well-marked group, though relatively limited in extent and forming but a small part of the tribe.

Limnichites Csy.

Limnichus (subgen. *Limnichites* Csy.), olim.

The prominent, coarsely faceted eyes and mode of antennal insertion sufficiently distinguish this genus, which is one of the more isolated types of the tribe, not only for those reasons but on account of the very deep and pronounced sculpture of the entire body generally prevailing. We have at present the following eight known species:

- Elytral punctures large, very deep and so densely crowded as to be regularly polygonal, with very fine separating walls, resembling a honey-comb. 2
- Elytral punctures almost as large and very deep but impressed, circular and isolated, separated by their own diameters to about one-half that extent according to the species. 3
- Elytral punctures decidedly smaller, less deep, more perforate than impressed and separated by from two to nearly three times their own diameters. 6
- 2—Oblong-suboval, the sides straight and parallel medially, black, not shining because of the dense sculpture though the fine interspaces are shining; pubescence very short, decumbent, coarse, cinereous, irregularly variegated with fulvous; punctures of the head and elytra rather large, polygonally crowded, those of the pronotum and abdomen almost equally dense but not quite so large; prothorax nearly two and one-half times as wide as the median length, the sides moderately converging from base to apex and feebly, subevenly arcuate, the apical angles produced and acute from above; surface obtusely impressed along the median line except apically, the scutellar lobe moderate; scutellum ogival, densely, coarsely punctate, slightly longer than wide; elytra scarcely a third longer than wide, rapidly very obtusely narrowed behind in apical third; third and fourth ventral sutures rather strongly gradually bent posteriorly toward the sides; hypomera only impressed near the inner angle. Length 1.6 mm.; width 0.85 mm. Texas (Austin and Columbus—original type from San Bernardino, Cal.). [*Limnichus nebulosus* Lec.,—Bull. U. S. Surv., 1879, V, p. 515]. **nebulosus** Lec.
- Oblong-oval, slightly larger and stouter, the sides straight for a shorter distance medially, black; sculpture throughout nearly as in *nebulosus*,

the vestiture a little longer, coarser and more conspicuous, pale fulvous, irregularly variegated with cinereous; prothorax almost three times as wide as the median length, the sides as in the preceding but still less arcuate, the median line more finely and acutely impressed almost throughout the length, the apical angles similarly produced and acute; scutellum slightly narrower and more elongate, otherwise similar, ogival; elytra almost similar in form, except that the humeri are more broadly rounded and the sides, in rather more than apical third, more gradually and arcuately converge around the more broadly and evenly rounded obtuse apex; abdomen similar in form, convex, densely opaque because of the rather coarse, very deep and dense cribrate punctures, which are almost equal throughout; hypomera inwardly and deeply impressed almost throughout, coarsely, moderately closely cribrate, the sulcate prosternum with coarse perforate punctures, separated by a little less than twice their own diameters. Length 1.8 mm. width 1.0 mm. California (Calaveras Co.). **densissimus** n. sp.

3—Abdominal punctures very dense throughout, only very slightly smaller medially than laterally. 4

Abdominal punctures materially less coarse and more widely separated medially than laterally, the entire surface of the abdomen more shining. 5

4—Body larger, oblong-oval, convex, black, rather shining, the pubescence short, coarse, decumbent, not dense, cinereous, slightly and feebly variegated with fulvous; head with large and very dense polygonal punctures; prothorax more than twice as wide as long, the sides rather strongly converging from base to apex and moderately arcuate; surface feebly, subacutely impressed along the middle part of the median line and with small punctures, separated by more than twice their own diameters, becoming much coarser and denser but not polygonal laterally, also with a short, transversely arcuate series of tumid punctures at the middle; scutellum slightly longer than wide, rather finely punctured like the middle of the pronotum; elytra about a fourth longer than wide, the sides parallel and straight, rounding at base, rapidly and strongly converging and but slightly arcuate in apical third to the narrowly obtuse apex; punctures coarse, deep, impressed, separated by their own diameters; abdomen dull, the punctures moderate in size, deep and very dense throughout, the third and fourth sutures strongly, evenly arcuate throughout the width and much stronger than the first two. Length 1.95–2.1 mm.; width 1.15–1.2 mm. Described here from Iowa and Louisiana; specimens originally cited from Pennsylvania. [*Limnichus punctatus* Lec.,—Proc. Acad. Phila., 1854, p. 116; *L. olivaceus* Lec., l. c.] **punctatus** Lec.

Body rather large, somewhat as in *punctatus* but much narrower, duller, with denser sculpture and vestiture, the coarse close-set hairs on the elytra luteous, more definitely and sharply maculate with cinereous than in *punctatus*; prothorax relatively shorter, almost three times as wide as the minimum length, with the sides less strongly converging from base to apex and nearly straight; punctures

slightly larger, separated by not quite twice their widths medially, becoming notably coarser and densely crowded but not polygonal laterally, the transverse line of tumescent punctures rather less marked than in *punctatus*. the surface thence to the scutellum more concave and with a fine impressed and more impunctate median line; elytra longer, fully a third longer than wide, more gradually narrowed behind to the narrowly and feebly lobe-like tip, the punctures fully as coarse and closer, separated by evidently less than their own widths; under surface punctured nearly as in *punctatus*, the metasternum however rather less coarsely and closely. Length 1.95 mm.; width 1.05 mm. Virginia (Lee Co.).

virginicus n. sp.

Smaller species, narrower than in *punctatus*, more evenly oval, convex, black and less shining, the vestiture similar; head with rather coarse and deep, polygonally crowded punctures; prothorax three times as wide as its shortest length, the converging sides feebly arcuate, the advancing angles acute; surface with rather strong deep punctures, which are evidently smaller than those of the head and elytra and separated by one-half more than their own widths medially, becoming much denser but only a little larger laterally, rather finer behind two feebly marked lines proceeding somewhat obliquely and transversely from near the middle point of the finely impressed and subentire median line; scutellum slightly longer than wide, punctured nearly like the pronotum; elytra barely a fourth longer than wide, the sides feebly arcuate, more rounding basally and more gradually converging and arcuate in more than posterior third than they are in *punctatus*, the apex narrow and more acutely rounded; punctures rather coarse, very deep but impressed, separated by barely half of their own diameters; abdomen densely dull, in structure and sculpture nearly as in the preceding, the deeply sulcate prosternum with deep, nearly perforate punctures, separated by barely one-half more than their own widths. Length 1.6 mm.; width 0.85 mm. Texas (Austin). **austinianus** n. sp.

5—Oblong-oval, rather shining, black, feebly ænescent anteriorly, the pubescence short, coarse, subdecumbent, fulvous, mottled on the elytra with ill-defined cinereous spots; head deeply, densely punctate, the punctures obliquely subcoalescent on the vertical part of the front; prothorax much more than twice as wide as its median length, the sides moderately converging and broadly arcuate throughout, the punctures rather fine, separated by more than twice their own diameters, each attended by an extremely minute punctule alongside, the punctures becoming a trifle closer in a median area in basal half, which is limited anteriorly by just visible and transversely oblique subhumid lines, the punctures laterally moderately large and deeper but scarcely closer, being still separated by nearly twice their widths; scutellum moderate, punctured like the adjoining pronotum; elytra oblong, less than a fourth longer than wide, obtusely rounded behind, the apex with a narrow and feeble subtruncate lobe, the sides nearly straight thence in basal three-fifths, except at the slightly prominent humeri; punctures coarse, very

deep, impressed, separated by very nearly their own diameters; abdomen shining, the punctures laterally very large, moderately separated, becoming notably smaller and separated by twice their widths medially, the last segment closely cribrate throughout; sulcate prosternum with fine punctures, separated by more than three times their widths; hypomera deeply concave toward the inner angle. Length 1.65 mm.; width 0.8 mm. California (Gilroy Hot Springs, Sta. Clara Co.). [*L. (Limnichites) perforatus* Csy.,—Ann. N. Y. Acad., 1890, p. 155]. **perforatus** Csy.

Oblong-oval, in color, form and general sculpture nearly as in the preceding but a little broader, the vestiture somewhat longer and closer, less definitely mottled and more cinereous; head strongly, densely punctate, the punctures anteriorly not obliquely coalescent; prothorax with the punctures medially rather less fine than in *perforatus* but otherwise similar, separated by twice their widths, somewhat smaller but quite as sparse in a more flattened median basal area which is limited anteriorly by two rather distinct lines obliquely approaching the fine impressed median line and uniting therewith just beyond its middle point as in *perforatus*, the punctures laterally materially coarser and denser, separated by less than half their widths; scutellum as usual, slightly longer than wide, ogival and punctured like the adjoining part of the pronotum; elytra coarsely, very deeply impresso-punctate, the punctures separated by rather less than their own diameters; abdomen less shining than in the preceding, strongly and much more closely punctate throughout and more closely clothed with dark cinereous pubescence, the punctures medially not much finer than at the sides and separated by only about half their widths; on the sulcate prosternum stronger than in *perforatus* and separated by twice their own diameters. Length 1.6 mm.; width 0.85 mm. Texas (Columbus). **foraminosus** n. sp.

6—Larger than the preceding, more evenly oval, obtuse behind, the apex feebly and narrowly lobed, shining, black, the short decumbent hairs very coarse and conspicuous, pale fulvous, indefinitely mottled with cinereous on the elytra; head not very coarsely punctate, the punctures separated, becoming closely crowded only anteriorly; prothorax rather less transverse though evidently more than twice as wide as long, the rather more converging sides feebly and evenly arcuate, the surface with a transversely subarcuate series of tumescent punctures medially, only behind which is the median line impressed, the general punctures, fine, separated by two or three times their widths, becoming laterally only slightly larger and still separated by nearly twice their diameters; scutellum finely, sparsely punctate, subimpunctate about its ogival contour; elytra a fourth longer than wide, the sides broadly rounded basally, beginning to converge very slightly from near basal fourth, gradually more rounded posteriorly, the punctures small, not so deep as usual and separated by more than twice their diameters; abdomen closely, rather strongly cribrate, the punctures medially toward base becoming fine and separated by twice their widths, the punctures of the sulcate prosternum coarser and deeper but similarly separated

by about twice their widths. Length 1.9–2.0 mm.; width 1.2 mm. Michigan (Detroit). [*L. (Limnichites) olivaceus* Csy. nec Lec.,—Ann. N. Y. Acad., 1890, p. 154].....*huronius* n. sp.

The remarkable median modification of the pronotum, either by a short transversely arcuate series of tumid punctures, as in the larger species *punctatus* and *huronius*, or by shorter more feeble subtumid barely traceable and not specially punctured lines in most of the smaller species of this genus, is a character sometimes traceable in a greatly modified form in the genus *Eulimnichus*, and was first discovered by Dr. Sharp in examining some Central American species, where it becomes strikingly developed; it is therefore a somewhat general character, though as noted thus far not affecting any other groups than *Limnichites*, *Eulimnichus*, *Phalacrichus* and *Limnichalia*; it cannot be correlated with any other special modification, either of the pronotum or prosternum, and is probably a vestigial character of some sort. Its presence in only the four genera mentioned does not indicate generic identity of those four groups, for the differences in the front, eyes and antennal insertion between *Limnichites* and *Eulimnichus* are far more significant than those distinguishing either of these genera from some others, such as *Lichminus*, not possessing this special pronotal character.

In my former revision of this group I reinstated *olivaceus* Lec., on what now prove to be some erroneous or unwarrantable assumptions, for, on reading the original description of *olivaceus*, I observe the statement that “the punctures are larger” than in *punctatus*—though this proves to be largely fanciful,—while in *olivaceus* Csy., nec Lec., named *huronius* above, the punctures are very much smaller than in *punctatus*. Again under the original description of *obscurus* (l. c., 117) appears the statement “less densely and more finely punctured than those above described [*olivaceus* and *punctatus*], the punctures being more distant from each other than their own diameters.” It is to be inferred from this that the punctures in *olivaceus* and *punctatus* are separated by not more than their own diameters, a condition which is known to be exactly that existing in *punctatus*, while in *huronius* the punctures, which are much smaller and feebler, are separated by between two and three times their diameters. Furthermore there can be no jus-

tification in assuming that the specimen bearing the type label of *olivaceus* in the LeConte collection is not truly the type of that species, which, as I stated in my former revision, is indistinguishable from the type of *punctatus*, especially when this fact is corroborated by LeConte himself in his latest table of *Limnichus*,—although this in itself is not conclusive evidence, as the author was mistaken in uniting his *obscurus* with *ater*. There can be no doubt therefore that the species described above under the name *huronicus* is valid and distinct from *punctatus*; *virginicus* is closely allied to *punctatus* but seems to be distinct.

Though almost certainly identical and following the distribution of many species, such as *Limnichoderus naviculatus* and *Physemus minutus*, *nebulosus*, as described above from central Texas specimens, may possibly be different specifically from the San Bernardino type; but the description of LeConte is ambiguous and valueless in totality, being simply: Body beneath densely and coarsely punctured, smaller and more elongate than *punctatus*; pubescence above brownish, mottled with silvery-white. 1.5 mm. San Bernardino, Cal. In case of conflict it might be contended that these few words could not be held to be proper publication, if in doing this we did not have to rule out a large proportion of the species of Fabricius and some other early authors as well. *Eulimnichus confertus* Shp., is evidently very closely allied to *austrianus* and *E. admirandus* Shp., from Teapa, may be identical with *nebulosus* Lec.

Eulimnichus Csy.

Limnichus (subgen. *Eulimnichus* Csy.), olim.

The species of this genus are rather more numerous perhaps than those of *Limnichites*, and individuals of the various species are apparently much more abundant and less local as a rule. The transverse line of the pronotum, when visible, never has the nature of a swelling of the surface or a series of detached punctures, but is formed by a simple intensification of the minute reticulation of the surface and is rendered evident only by its consequently slightly greater opacity; the line is always very fine and feebly marked, frequently wholly wanting and would never be noticed if not particularly searched for in connection with the transverse series of punctures, frequently notably evident in the preceding genus

and forming so conspicuous a feature in the allied tropical genera. The sculpture is generally moderate, the head always with compressed longitudinally anastomosing furrows and fine plication, instead of the evenly cribrate sculpture of *Limnichites*, and the scutellum is always much more elongate and more acutely ogival. The punctures are always feebler or obsolescent toward the sides of the upper surface, especially behind, which is not the case in *Limnichites*, but the prosternum is constantly and similarly sulcate along the middle. Our species, nine in number, may be separated as follows:

- Surface between the punctures, at least toward the sides of the pronotum, more or less strongly micro-reticulate.....2
 Surface toward the sides of the pronotum smooth and polished, devoid of evident micro-reticulation.....7
 2—Elytral punctures stronger, distinct, separated by slightly more than evidently less than twice their own diameters.....3
 Elytral punctures minute, feeble and very remotely scattered, sometimes almost completely obsolete. 5
 3—Prosternal episterna finely attenuate anteriorly, attaining the minute lateral incisure of the apex or very nearly. Body oblong, convex, very obtuse before and behind, black, with feeble grayish shining lustre, the vestiture short, close, coarse, decumbent, pale, dull fulvous, feebly mottled with cinereous; head with the usual anastomosing longitudinal furrows; prothorax three times as wide as its minimum length, strongly narrowed from base to apex, with straight sides; surface with a very fine and feeble transverse line of greater opacity and with a fine striiform impunctate median line evanescent toward tip, the punctures fine, widely separated, becoming still finer, much feebler and even sparser in the densely reticulate lateral areas; elytra a fourth longer than wide, parallel, the sides straight, rounding at the slightly tumid humeri, gradually broadly and evenly rounding behind in about apical third, the punctures not very deep or coarse, separated by not quite twice their diameters; abdomen rather dull, the micro-reticulation everywhere strong, the surface somewhat longitudinally furrowed, with fine, well separated punctures which become coarse and coalescent at the sides, forming a coarse marginal furrow, the last segment (♂) with a median area, pointed behind, which is depressed, extremely densely, finely chagrined and densely clothed with long yellowish-cinereous hairs, the pubescent area smaller, feebler and less definite (♀). Length 2.15–2.45 mm.; width 1.15–1.3 mm. California (about Monterey Bay). [*Limnichus analis* Lec.,—Bull. U. S. Geol. Surv., V, 1879, p. 515]. **analis** Lec.
 A—Similar to the preceding but smaller and narrower, the vestiture rather closer and more conspicuous, the pronotal punctures still finer and sparser; abdomen more shining, finely, sparsely punctate,

the triangular depressed opaque and densely pubescent spot of the last segment (♂) relatively broader, at base rather more than a third as wide as the segment, whereas in *analís* it is much less than a third as wide as the segment. Length 1.8–2.2 mm.; width 0.95–1.2 mm. Arizona (Riverside),—Wickham.

rugiceps n. subsp.

- B—Similar to *analís* but more parallel and relatively more elongate, the elytral punctures rather smaller, fully as well separated and notably feebler, the coarse decumbent hairs more readily denuded or less persistent; impressed median line of the pronotum much broader and deeper but only extending from the base to slightly beyond the centre; elytra much longer, a third longer than wide; abdomen slightly alutaceous, finely, sparsely punctate, the last segment (♂) as in *analís*. Length 2.2 mm.; width 1.15 mm. Colorado (Denver).....**coloradensis** n. subsp.

Prosternal episterna acute and attenuate anteriorly but more rapidly so and not quite attaining the apex or the lateral fissure at apex; sculpture not so strong or dense.....4

- 4—Form somewhat as in *analís* but much smaller, more shining and more finely and sparsely punctate, oblong-oval, convex, shining, black, not densely clothed with moderately coarse decumbent and slightly variegated pubescence; prothorax strongly transverse, the converging sides straight, the surface feebly micro-reticulate, strongly at the sides, the punctures small, widely separated, even feebler and sparser laterally, without fine transverse line of opacity, the median line finely impressed in about basal half only; scutellum very minutely, sparsely punctulate; elytra barely more than a fourth longer than wide, obtuse behind, the sides parallel and just visibly arcuate thence to the slightly rounded humeri, the punctures small, feeble, separated by three to four times their widths; abdomen strongly shining, finely but strongly, sparsely punctate, the punctures coarse and close narrowly along the sides and apex, the last segment (♂) with a large central pubescent area, which is strongly, densely punctate but rather indefinitely limited and scarcely at all impressed. Length 1.6–1.8 mm.; width 0.8–1.0 mm. Abundant in the entire maritime region of California. [*Limnichus californicus* Lec.,—Bull. U. S. Surv., V, 1879, p. 515].....**californicus** Lec.

Form more elongate and more evenly, in fact very evenly, oval, much more gradually pointed behind than any of the preceding, black, larger and less shining than *californicus*, the vestiture nearly similar, not dense, slightly variegated, pale fulvous and cinereous; prothorax very transverse as usual, the strongly converging sides feebly, evenly arcuate, exactly continuing the outline of the elytra, finely but strongly, loosely punctate, rather less sparsely but more feebly laterally, with a feeble transverse line of opacity, the median line finely impressed and striiform, obsolete apically; elytra a third longer than wide, the sides very evenly rounded from base to apex, gradually very little more so behind, the apex much more acutely rounded than usual, widest between basal third and fourth, the punctures small but rather strong, separated by slightly less than

three times their widths; abdomen shining, faintly micro-reticulate, finely, sparsely punctate, not more coarsely so near the sides, the last segment (σ^7) with a small apical spot which is slightly impressed, densely punctate and clothed with coarse but not notably long whitish hairs, less erect and shorter than in the preceding forms. Length 2.0 mm.; width 1.2 mm. New York. [*Limnichus obscurus* Lec.,—Proc. Acad. Phila., 1854, p. 116].....**obscurus** Lec.

- 5—Surface lustre alutaceous, more shining and subæneous anteriorly. Form nearly as in the preceding, very evenly oval, convex, gradually rather pointed behind, the sides continuously arcuate throughout, black, the very short sparse and decumbent vestiture easily shed; head with the usual dense, anastomosing, longitudinally pliciform sculpture, with small included punctures: prothorax rather less than three times as wide as the minimum length, finely, sparsely punctured, the fine micro-reticulation feeble, strong laterally, where the punctures are feebler as usual, the median line impressed and striiform in basal half; elytra alutaceous, the micro-reticulation larger and more polygonal than on the pronotum though feeble, the punctures fine, sparse and very feeble, annuliform, shallower than those of the pronotum; abdomen more shining, very minutely, sparsely punctulate, not more coarsely laterally, the last segment more strongly laterally and apically, the pubescent spot (σ^7) subapical, feebly defined and closely punctate but with short inconspicuous hairs. Length 1.8–2.0 mm.; width 1.15–1.2 mm. Colorado (Buena Vista,—8000 feet elevation—Wickham; Veta Pass,—LeConte). [*Limnichus montanus* Lec.,—Bull. U. S. Geol. Surv., 1879, p. 515].

montanus Lec.

Surface lustre strongly shining throughout, the sparse decumbent pale vestiture more persistent, coarse as usual but very short.....6

- 6—Form rather broadly oval, rounded at the sides, gradually rather acute behind, black, polished, the micro-reticulation of the upper surface everywhere fine and subobsolete, evident though not strong toward the sides of the pronotum; plicate sculpture of the head distinct; prothorax barely two and one-half times as wide as long, the strongly converging sides straight, the apical angles much produced and acute as usual; median line finely striiform from the middle nearly to the base, not concave, the transverse line of opacity wholly wanting, the punctures minute and sparse; scutellum as usual, elongate-ogival; elytra about a fourth longer than wide, almost evenly rounded at the sides, gradually acuminate, minutely, sparsely and very inconspicuously punctulate; abdomen shining, much less finely though loosely, more deeply punctate, the last segment more coarsely and (σ^7) with a small, indefinite, more closely punctured patch near the apex, clothed rather inconspicuously with slightly longer hairs, the tip with a shallow transverse emargination as usual. Length 1.5–1.8 mm.; width 0.75–1.0 mm. Mississippi (Vicksburg) to New Mexico (Albuquerque). [*Limnichus* (*Eulimnichus*) *perpolitus* Csy.,—Ann. N. Y. Acad., 1890, p. 151]...**perpolitus** Csy.

Form more narrowly oval and smaller in size, similar in general outline, sculpture and vestiture, black, similarly convex, rounded at the

sides and gradually arcuately acute behind but with the lustre not quite so polished, the micro-reticulation somewhat more evident throughout, notably coarse and polygonal on the elytra though very feebly defined; abdomen shining, finely, sparsely punctate, the last segment coarsely, except at base, but not densely, having (σ^7) a large posteriorly pointing equilatero-triangular central space of dense punctures, somewhat as in *analis*, but not impressed, more indefinitely limited and clothed with shorter, much less conspicuous pale hairs. Length 1.4-1.6 mm.; width 0.65-0.73 mm. Southern California *evanescens* n. sp.

- 7—Lustre rather dull, the outline notably short and broad though rather acutely ogival at apex. Black, convex, the vestiture coarse, close, conspicuous and persistent, obscure fulvous, distinctly though indefinitely mottled with cinereous; head with pliciform sculpture which is replaced by isolated coarse punctures on the occiput: prothorax short as usual, the strongly converging sides straight, the surface with a minutely striiform line basally, the punctures fine, well separated, not feebler toward the sides as usual but evidently deeper, a little larger and somewhat less widely separated, with the interspaces not at all reticulate but smooth and polished; elytra evidently less than a fourth longer than wide, the sides parallel, feebly arcuate and rounding at the humeri, gradually rounding and converging behind the middle, the apex somewhat acutely ogival, the punctures a little larger than those of the pronotum, rounded but not very deep, separated by rather less than twice their diameters; abdomen finely, rather sparsely punctate, the last segment deeply and densely almost throughout, without a distinct spot of condensed punctures and pubescence. Length 1.65-1.8 mm.; width 0.8-1.05 mm. North Carolina, Florida and Louisiana. [*Limnichus ater* Lec.,—Proc. Acad. Phila, 1854, p. 117]. *ater* Lec.
- Lustre strongly shining, more narrowly oval and smaller in size, the vestiture less close-set and much less conspicuous, more easily denuded. 8

- 8—Outline oval, rounded at the sides, gradually acutely ogival behind from rather before the middle of the elytra, polished, deep black, without any sort of metallic lustre, the sparse vestiture coarse and rather long, mingled fulvous and cinereous; head with pliciform sculpture, becoming not very large, widely isolated punctures posteriorly; prothorax short, with the rapidly converging sides straight, having a finely striiform median line from the middle nearly to the base, the punctures rather fine but deep, well separated, becoming even a little stronger but scarcely at all closer laterally, where the interspaces are highly polished and without trace of micro-reticulation; elytra in outline nearly as in *ater* but rather more elongate, fully a fourth longer than wide, the punctures a little larger than those of the pronotum but not so deep, separated by more than twice their own widths, evanescent as usual laterally and apically; abdomen convex, shining, finely, sparsely punctate, the last segment more coarsely punctate only toward the sides and about the apex, without a definite

patch of denser punctures and pubescence; prosternum rather strongly punctate, the punctures separated by nearly twice their diameters. Length 1.5 mm.; width 0.75 mm. Georgia. [*Limnichus nitidulus* Lec.,—Proc. Acad. Phila., 1854, p. 117].. ***nitidulus*** Lec. Outline, color and lustre nearly as in *nitidulus* but slightly narrower, the sides rounded, gradually ogival posteriorly but with the tip of the elytra rather more obtuse and sublobate; pubescence rather less sparse, finer, shorter, rather persistent and almost uniformly dusky-cinereous in color, less conspicuous; head with pliciform sculpture, replaced posteriorly by rather coarse, very close-set punctures, which are somewhat laterally compressed; prothorax not quite so short as in the preceding and with the converging sides not straight but feebly arcuate, the median line and punctures similar, the latter becoming rather more notably stronger though not closer laterally, where the interspaces have a very feeble and subobsolete micro-reticulation, observable only with difficulty; elytra nearly similar though not quite so elongate, the apex narrowly obtuse and lobiform, the punctures more than twice as large as those of the pronotum but relatively shallow and very broadly impressed, separated by rather more than twice their diameters; abdomen with rather strong though well separated punctures, the last segment (♂) strongly, very closely punctate throughout, the punctures gradually becoming fine and very dense in a small, subapical, unimpressed opaque spot on which the hairs become slightly longer and denser but scarcely paler and inconspicuous; prosternum nearly as in the preceding. Length 1.5 mm.; width 0.7 mm. Rhode Island (Boston Neck).

sculpticeps n. sp.

The species named *analís* by LeConte, is definitely restricted in the above table to those individuals, the largest of the genus, occurring somewhat abundantly in the coast regions south of San Francisco; several allied forms occur, also abundantly as a rule, in the desert regions of Arizona and Colorado, two of which are defined above under the subspecific names *rugiceps* and *coloradensis*. The Colorado form is quite distinct, having sparser and more easily denuded vestiture, a more oblong parallel outline and much longer elytra. Both of these forms are probably specific in value, rather than subspecific, but are left with the latter status for the present; they were all thrown together under the name *analís* by LeConte and in my previous revision, but it is well to have the typical form fixed as a foundation for future work. The very few words forming the original description of *californicus* are largely erroneous or misleading, it being stated that the last ventral segment has no dense central pubescence and that the elytra are strongly punctured; relatively to *perpolitus* the latter statement is passably correct, but

to such forms as the genus *Limnichites*, which were included in the same table, it is altogether wrong.

Lichminus Csy.

Limnichus (subgen. *Lichminus* Csy.), olim.

This genus is very well characterized by the broad unimpressed prosternum, broad flat hypomera, wholly devoid of the usual shining inner margin so developed in *Pelochares* and distinct even in *Limnichoderus*, by the unusually large equilatero-triangular scutellum and rather long antennæ, in which feature as well as the non-sulcate prosternum it is allied to *Pelochares*, being the only close approach to that European genus occurring in North America; but it differs from *Pelochares* in the formation of the side margins of the prothorax, the fine reflexed edge continuing here to the apex, while in that genus it terminates anteriorly in a fine prominent angle at some distance behind the thoracic apex. The prosternal episterna are shorter, with the anterior angle simple and moderately acute, not somewhat produced as it is in *Pelochares*. We know as yet but a single species definable as follows:

Evenly elongate-oval, gradually sharply acuminate behind, strongly convex, black, rather feebly shining, the vestiture decumbent, moderately short, not dense, coarse and almost uniformly fulvo-cinereous; head evenly convex, strongly micro-reticulate, the very fine feeble punctures thereby rendered indistinct; prothorax short, with strongly converging and nearly straight sides, the apical angles not or scarcely produced from above, the usual basal lobe rather short, wider than usual, the median line not at all impressed, the punctures minute and sparse, not stronger or denser laterally; elytra more than a fourth longer than wide, the sides evenly rounded, gradually converging and less arcuate to the acutely ogival apex, widest well before the middle, the micro-reticulation relatively very coarse but feeble, the punctures sparse, extremely fine, scarcely more than scars marking the attachment of the hairs; abdomen shining, feebly micro-reticulate, rather long, obtusely acuminate and only slightly convex, very finely, evenly, not densely punctate, the last segment more coarsely and closely throughout though very shallowly and with somewhat longer fine hairs. Length 1.65–1.8 mm.; width 0.85–0.95 mm. California (Hoopa Valley, Humboldt Co.). [*Limnichus* (*Lichminus*) *tenuicornis* Csy.,—Ann. N. Y. Acad., 1890, p. 155]. **tenuicornis** Csy.

The three specimens in my collection are very uniform and exhibit no variability.

Limnichalia n. gen.

The general characters of this genus conform throughout to those of others here assigned to the *Limnichini*, the special modifications being the sulcate prosternum, the fine, posteriorly arcuate epistomal suture, the continuous oblique cariniform margins from the eyes to the epistomal apex, concealing the attachment of the antennæ, the more continuous elytral epipleura, these being sinuated for the tips of the hind femora in repose, the long pale antennæ, with peculiarly modified second joint and very long loose and gradually broadened compressed 5-jointed club and the rather long slender tarsi. The type may be described as follows:

Oval, moderately convex, acutely ogival at apex, polished, pale castaneous in color, the legs pale brown, the mouth-parts and antennæ pale flavate, the vestiture sparse, consisting of moderately long fine erect recurved hairs, dusky in color and not variegated; epistoma strongly reticulate, chagrined and indistinctly punctate, the entire remainder of the upper surface devoid of fine ground sculpture of any kind; head with rather large shallow and separated punctures anteriorly, which fade completely away posteriorly, the latter surface and entire pronotum with sparse, excessively minute punctules, not larger than the base of the hairs and not larger or closer laterally on the latter; prothorax about three times as wide as long, the strongly converging sides evenly and distinctly arcuate, the basal lobe almost completely obsolete, the surface evenly convex, not impressed medially, having, slightly behind the middle, a short transverse and feebly arcuate series of fine close-set asperulate punctures; scutellum large, with arcuate sides, acutely ogival, barely longer than wide; elytra fully a fourth longer than wide, widest near basal third, the sides evenly rounded, gradually converging and less arcuate posteriorly to the rather acute apex, very finely, feebly, rather sparsely punctulate; abdomen narrowly parabolic, convex, moderately shining, finely, feebly, asperulately but rather closely punctate, the hairs longer and more numerous posteriorly, pale, yellowish, the sutures fine, the last two but slightly more distinct than the two anterior. Length 1.6 mm.; width 0.85-0.9 mm. Isthmus of Panama (Colon). **colonica* n. sp.

As before stated *Eulimnichus sublævis*, of Sharp, described from Guatemala, also belongs to this genus but differs in its darker color, stronger sculpture and less distinct vestiture; there are doubtless many other Central American species, among which the minute *Eulimnichus ephistemus* Sharp, may be included.

There are two other Central American genera assigned by Dr. Sharp to the *Limnichini*, besides *Phalacrichus* and *Limnichalia* here

considered. These genera, named *Cyphonichus* and *Euthryptus*, both have fragile antennæ of aberrant structure but do not seem to have the transverse pronotal series of the first two genera, and also lose most of the peculiar facies of the *Limnichini*. I am compelled to pass over them at present, no examples being at hand.

Limnichoderus Csy.

Limnichus (subgen. *Limnichoderus* Csy.), olim.

The diminutive species of this genus, together with *Limnichus*, which is the principal European genus of the tribe and including numerous species of slightly greater average size, form a very distinctly defined group of the *Limnichini*, distinguished by the structure of the sides and base of the head, coarse epistomal suture and dual vestiture of very short dense appressed hairs, with longer sparse erect hairs interspersed, as before noted. The scutellum is of rather small size, generally slightly longer than wide and of triangular form. The other characters, including the crural excavations, are those of the tribe, without any striking modifications so far as noticed. Our species, some eight in number, may be defined as follows:

Abdomen without trace of scattered punctures, finely, uniformly and densely chagrined and dull in lustre. Form oval, convex, somewhat rapidly and not very acutely acuminate behind, the minute punctures bearing the very short hairs dense throughout, castaneous in color, paler beneath, sometimes blackish above, the vestiture pale brown, variegated slightly on the elytra with two or three silvery spots, apparently caused to some degree by the different angle of reflected light due to the changing direction of the hairs; head convex, the lateral depression behind the antennæ deep and with longer whitish hair; prothorax very short, the converging sides nearly straight, unimpressed, the sculpture not stronger laterally, the basal lobe distinct; elytra about a fourth longer than wide, widest near basal third, the sides rounded, converging gradually behind, the apex narrowly, subacutely and feebly lobed, the surface convex at base to the level of the pronotum, having, in addition to the minute ground sculpture, a few scattered perforate punctures of moderate size. Length 1.4–1.5 mm.; width 0.7–0.78 mm. Central Texas to southern California. [*Limnichus* (*Limnichoderus*) *naviculatus* Csy.,—Ann. N. Y. Acad., 1890, p. 156].. ***naviculatus* Csy.**

Abdomen finely, densely and evenly sculptured and more or less dull, but having in addition a few scattered perforate punctures of moderate size.....2

Abdomen with minute dense sculpture and dull lustre as in the preceding,

- but in addition with many rather closely placed coarsish punctures, which are larger than in the preceding group.....7
- 2—Elytra gradually narrowed and with less arcuate sides from about basal third to the apex, which is notably acute.....3
- Elytra more rapidly narrowed and more arcuate at the sides posteriorly only from about the middle, more obtusely ogival at apex.....4
- 3—Punctures of the abdomen only visible toward the middle basally, few in number and very feebly defined, the fine ground sculpture very dense. Form more briefly oval, convex, piceous-black, scarcely paler beneath, the dense vestiture almost uniformly dark ashy, scarcely at all variegated; prothorax two and one-half times as wide as long, the moderately converging sides straight; punctures minute, close-set and rather deep, the interspaces polished, the median line feebly striiform only centrally; elytra shorter than usual, barely visibly longer than wide, the strongly and evenly rounded sides gradually less arcuate posteriorly to the acute apex, the surface not notably convex at base to the level of the pronotum, irregularly and finely, rather sparsely and perforately punctate, the minuter hairs not borne from evident punctures. Length 1.2 mm.; width 0.65 mm. Texas (Columbus).....**pulvereus** n. sp.
- Punctures of the abdomen small but more numerous and more visible, the ground sculpture less deep and dense, with the surface a little more shining medially. Form more elongate-oval, still more gradually narrowed behind to the very acute apex, blackish, the under surface slightly, the legs much, paler, rather more shining than usual, the erect hairs somewhat more numerous and the decumbent apparently a little longer; prothorax relatively less transverse than in *pulvereus*, the sides more strongly converging from base to apex, nearly straight, the minute punctulation rather finer and feebler and not quite so close-set; elytra nearly a fourth longer than wide, the rounded sides very gradually converging posteriorly to the still more notably acute apex, the scattered punctures rather numerous but widely spaced and distinctly more minute than in the preceding, the interspaces smooth and shining, the extremely minute scars left by the shorter hairs almost invisible. Length 1.3–1.35 mm.; width 0.65–0.73 mm. Georgia to Louisiana. [*Limnichus ovatus* Lec.,—Proc. Acad. Phila., 1854, p. 117].....**ovatus** Lec.
- 4—Pubescence very short, rather finer and not so dense, allowing the integuments to shine distinctly through the vestiture.....5
- Pubescence less abbreviated and very dense, so that when intact the upper surface is densely dull, the integuments well covered.....6
- 5—Form not very broadly oval, convex, pale castaneous, still paler beneath, the short vestiture extremely short, not dense, yellowish, the longer and more erect hairs not numerous, the few rather irregular longitudinal series of stiffer and more erect hairs difficult to see; prothorax two and one-half times as wide as long, the converging sides straight, the surface not evidently impressed medially, the punctures very minute, feeble and well separated; scutellum evidently longer than wide, acutely triangular; elytra scarcely a fourth longer than wide, not evenly oval, the sides parallel and moderately

arcuate, rounding at the humeri and more gradually rounding and converging behind the middle to the evenly ogival apex, the surface not strongly convex at base, the punctures fine, perforate, rather sparsely scattered, the points of attachment of the short hairs not distinct, the surface polished, the coarse punctures scattered along the finely reflexed lateral margins only moderately large, deep, the surface adjoining the margin barely at all impressed; abdomen not quite so strongly or densely dull as usual, the few scattered punctures very fine though evident. Length 1.2 mm.; width 0.63 mm. Florida (Capron). [*Limnichus* (*Limnichoderus*) *seriatus* Csy.,—Ann. N. Y. Acad., 1890, p. 158].....***seriatus* Csy.**

Form more broadly oval, not quite so shining, blackish, paler and dusky-rufous beneath, the short hairs rather longer and more evident; prothorax similar in outline but with the very minute punctulation rather more close-set; scutellum a little broader, triangular; elytra about a fifth longer than wide, similar in general form to the preceding, the punctures more numerous, much coarser and deeper than in *seriatus*, becoming still more notably coarse, deep and numerous on the convex flanks, coarse along the fine reflexed lateral margins and sublinear in arrangement throughout, the surface evidently impressed along the lateral margin; abdomen more densely dull than in *seriatus*, the fine and widely scattered punctures less visible. Length 1.2 mm.; width 0.66 mm. Florida (locality unrecorded).

***floridanus* n. sp.**

6—Outline almost regularly oval, stout, only moderately convex, blackish, dusky-rufous beneath, dull; head rather small; prothorax short and strongly transverse, the very strongly converging sides nearly straight, not impressed medially, the very minute punctures bearing the short dense appressed pubescence close-set; elytra barely a fifth longer than wide, widest near the base, the sides evenly rounded, not more strongly at the humeri, gradually converging and arcuate posteriorly to the ogival apex, the very dense matted pubescence luteous-brown, somewhat variegated, the larger scattered punctures much coarser than in any of the preceding, also coarse and sublineate on the flanks, the subvertical part of which is shallower than usual; abdomen with fine dense sculpture, the scattered punctures rather numerous, moderately large and distinct. Length 1.5 mm.; width 0.8 mm. Central Texas (Belfrage). [*Limnichus* *lutrochinus* Lec.,—Bull. U. S. Geol. Surv., V, 1879, p. 515].....***lutrochinus* Lec.**

Outline shorter and broader, smaller in size, more rapidly ogival behind, more convex, the short pale yellowish-fulvous pubescence shorter and less abundant but very conspicuous, the longer suberect hairs numerous; surface more shining beneath; color blackish-castaneous, dusky-rufescent beneath; prothorax as in *lutrochinus* but not quite so broad, the fine close-set punctures distinctly larger and less numerous and the short hairs shorter and less dense; elytra still shorter, but little longer than wide, the sides more parallel, broadly arcuate, slightly more rounding basally than in *lutrochinus* and rather more rapidly rounding and converging from near basal third to the ogival apex, the surface more shining and less pubescent in a basal

region toward the scutellum, the punctures still coarser than in the preceding, rather numerous, not at all coarser near the lateral margins and very distinct in the less pubescent basal region, the short pale hairs forming two very indefinite fasciæ; abdomen minutely, very densely sculptured and dull, the few scattered punctures unusually small and difficult to observe. Length 1.3 mm.; width 0.75 mm. Texas (locality not recorded).....**lanosus** n. sp.

- 7—Oval, convex, shining, black above, piceo-rufous beneath, gradually though rather obtusely ogival at tip, the integuments polished, without any form of ground sculpture; prothorax rather narrower than usual, but little more than twice as wide as long, the converging sides straight, the surface very even, not impressed medially and with rather well separated punctures throughout but so minute as to be invisible except under great enlargement; elytra a fourth longer than wide, widest rather before the middle, the sides rounded, gradually slightly less so and converging posteriorly and a little more rounded at the humeri, the punctures small and widely spaced, gradually slightly larger sublaterally, becoming virtually obsolete near the suture, on the lower part of the flanks basally and on the humeral swelling, the impression along the finely reflexed lateral margin with a widely spaced series of very moderate punctures; short hairs only moderately dense, fulvo-cinereous, the longer hairs rather numerous but inconspicuous; abdomen more shining than usual, the minute sculpture finer and less dense, the punctures however much coarser and more numerous than in any other, perforate, separated by from once to twice their diameters throughout, except a moderately narrow area along the middle, where they become fine and sparse. Length 1.3 mm.; width 0.78 mm. Florida (Capron). [*Limnichus* (*Limnichoderus*) *punctiventris* Csy.,—Ann. N. Y. Acad., 1890, p. 159].**punctiventris** Csy.

There is, in all the species of this genus, a smooth shining and impunctate apical margin of the pronotum; it is delimited from the rest of the surface by an entire and very even transverse series of minute close-set asperulate punctures. This apical margin so delimited is not observable in any species of *Limnichus* that I have examined, and it forms another important structural difference between the two genera. Being apical and not submedial on the disk of the pronotum, it is not in any way associable with the transverse series of asperate punctures noticed by Dr. Sharp in some tropical types and referred to above under *Limnichalia*, and in *Limnichoderus* no medial transverse line of any kind is ever traceable. *Punctiventris* and *naviculatus* are very distinctly characterized species, at opposite extremes in regard to peculiarities of abdominal sculpture though mutually very consistent otherwise.

Tribe BOTHRIOPHORINI.

The different facies due to the very minute size of the body, together with the radically different structure of the antennæ and method of protecting them in repose, would seem to suggest a distinct tribe for species of the *Bothriophorus* type, though in most of their structural characters they are distinctly foretokened in *Limnichus*, the more general features of the head, under surface, legs, crural cavities and vestiture being almost identical; this however means subfamily relationship rather than tribal. There are two genera as follows:

- Antennæ with a gradually enlarged and rather compact, 3-jointed club, preceded by but one small joint. [Type *B. atomus* Muls.]. Palæ-arctic***Bothriophorus**
- Antennæ with a 2-jointed club, preceded by three equal small joints, the last joint notably large, shining, oval and bristling with long sparse hairs, which are nearly wanting basally; first joint rather shorter than the second and somewhat concave on its upper surface to receive the rather prominently rounded sides of the front just behind the epistoma and over the point of antennal insertion. [Type *P. minutus* Lec.]. Nearctic (Sonoran).....**Physemus**

The joints in the basal and distally tapering part of the antennæ, in both these genera, are very closely united and separated by close transverse lines of contact; they are 11-jointed in both. A diagram of the antenna of *Physemus minutus* (*Ditaphrus scymnoides* Csy.) may be found in the Bulletin of the California Academy, II, 1886, plate VII, fig. 18. *Bothriophorus* Muls., is exclusively European; its type, *atomus* Muls., resembles *Physemus minutus* very closely to external view.

Physemus Lec.*Ditaphrus* Csy.

The generic characters of *Physemus* reproduce those of *Limnichus*, with the exception noted above. The head is very similar in being convex at the sides before the eyes, with a short transverse epistoma, separated from the front by a deep suture and with a deep impression on the sloping sides of the front behind the antennæ, the eyes being subvertical and unusually coarsely faceted. As leading toward *Physemus* and *Bothriophorus*, it may be noted that the antennæ in *Limnichus* and *Limnichoderus* are partially sheltered in depressions, feebly defined at the base of the head itself but not involving the pronotum. The antennæ however are short, very stout basally

and of a distinctly different type of structure from any observable in the preceding tribe. The type of the genus may be described as follows:

Oval, rather sharply ogival behind, convex, moderately shining, black above, dark rufous beneath, clothed not very densely with very short decumbent fuscous hairs, with a feebly defined silvery spot on each elytron and with very few if any erect hairs intermingled; head convex, finely, rather closely punctate, the eyes with a carini-form margin immediately above them, at the anterior end of which is a deep pubescent rounded pit immediately behind the antennæ, and, at the posterior end, another deep rounded pit which is at the mouth of the oblique, polished, abruptly formed and deep pronotal fossa, the cylindrical bottom of the latter sloping upward posteriorly to the level of the pronotum; prothorax short and transverse, with strongly converging sides running into the fossæ from a dorsal viewpoint, minutely and closely punctate throughout and with a fine polished anterior margin, which seems to be slightly elevated and delimited by a finely and irregularly ragged line, the basal lobe well developed, the median line wholly unimpressed; scutellum rather small, a little longer than wide, triangular; elytra barely visibly longer than wide, rather widest near basal third, the sides rounded, gradually converging posteriorly to the acutely ogival apex, at base continuing the outline of the prothorax, very finely, equally and closely punctate, the punctures separated by two or three times their diameters, becoming asperulate laterally and apically, the interspaces without minute sculpture; abdomen minutely, densely sculptured and opaque, not punctate, the coxæ all very widely separated, the metasternum large, with distinct perforate punctures laterally, becoming very fine medially, the prosternum evenly convex, not sulcate, very broad, the wide apex broadly arcuate and received closely within a very broad shallow sinus of the short mesosternum. Length 0.68–0.88 mm.; width 0.45–0.58 mm. Central and southern Texas to southern California. [*P. minutus* Lec.—Proc. Acad. Phila., 1854, p. 117; *scymnoides* Csy.,—Bull. Cal. Acad., 1886, p. 252 (*Ditaphrus*)]. **minutus** Lec.

The posterior margin of the prosternum is not truncate as stated in my original definition of *Ditaphrus*, but broadly rounded as described above. This species is abundant; one specimen from Albuquerque, New Mexico, is a little larger than the others and there is some slight variation in the size of the pronotal and elytral punctures; there is however apparently but a single species, extending from Brownsville and Austin, Texas, to Fort Yuma, California.

The anterior smooth margin of the pronotum, defined by an irregularly jagged line, is homologous with the much broader margin

of *Limnichoderus*; in the European *Bothriophorus* this margin is reduced to a very fine and feeble even marginal bead. In the latter genus there is an oblique impression at the sides of the metasternum, to receive the tarsi when retracted; there is no trace of this in *Physemus*. *Physemus* is erroneously given as a synonym of *Bothriophorus* in the recent European catalogue.

Subfamily AMPHICYRTINÆ.

The longer and perfectly free or unretractile legs in *Amphicyrta* and allied genera impart a difference of facies which, taken in connection with the more narrowly separated coxæ and some remarkable modifications of the epipleura, might almost warrant the proposal of a distinct family; but there may be cause to deprecate too much reduction in the weight of family characters, though in such sections of the Coleoptera as that comprising the Byrrhids and Dascillids* it is very difficult to say whether there are really numerous valid families or only one very composite family. However, that *Amphicyrta* represents a very different type from any of the preceding is quite evident. The very broad hypomera, separated from the prosternum anteriorly by deep clefts, the scarcely differentiated pro-episterna, the free eyes on the sides of the laterally unmarginated head and many other characters, widely isolate the subfamily from the rest of the Byrrhidæ. There are two distinct tribes of the Amphicyrtinæ as follows:

Elytral epipleura only distinct basally, disappearing completely behind about the middle of the elytra, as in the Byrrhinæ... AMPHICYRTINI
 Elytral epipleura very wide, entire, extending virtually to the elytral apex, subhorizontal, perfectly flat, and, at the middle, about a fourth as wide as the entire body; coxæ more widely separated... LIOONINI

These insects are essentially peculiar to the more northern parts of the true Pacific coast regions.

Tribe AMPHICYRTINI.

This tribe is composed of two genera, differing extremely in size of the body, but both very convex and having polished integuments, with very sparse hairs or glabrous; they may be defined as follows:

* The misspelling of the family name Dascillidæ under the form "Dascyllidæ" by LeConte and Horn is quite unaccountable; it seems to have become universal in American literature.

Antenna short, with a loose 3-jointed club; eyes with coarse separated facets; elytra with feebly impressed lines and subserial arrangement of the punctures; tarsi slender, not lobed; anterior tibiæ slender, unmodified; body small in size. [Type *L. striolatus* n. sp.].

Lioligus

Antennæ long and subfiliform, never clavate; eyes finely and closely faceted; elytra without impressed lines, evenly but not regularly, much more closely punctate; third tarsal joint with a long oblique inferior lobe; anterior tibiæ broader, grooved, angulate externally; hind body more inflated; very much larger in size, more southern in habitat. [Type *A. chrysomelina* Erichs.]. **Amphicyrta**

These genera are both represented by a number of species, which occur under stones or old bark and in other similar places.

Lioligus n. gen.

The body is oblong-oval, much more elongate than in *Amphicyrta*, always highly polished and usually metallic green in coloration. The head is very short, convex, the eyes rather pointed beneath, moderately convex, the surface adjoining them above somewhat impressed; the frontal margin makes a very broad arc from eye to eye and is strongly, evenly beaded, the antennæ inserted under its sides, just before the eyes; the epistoma is small, transverse, thin and projects anteriorly below the level of the front;—it is assumed that this piece, at any rate, takes the place of the epistoma or clypeus of the preceding subfamily. The labrum well developed, transverse, convex, with its angles rounded and apex sinuate medially, the mandibles stout, the mouth organs rather small and the last joint of the maxillary palpi slender, sharply pointed and impressed on its anterior side; the head is moderately retractile. The prothorax is transverse, convex, with the anterior angles not or very feebly produced, the base not or scarcely lobed medially, the scutellum rather shorter than wide, triangular and somewhat convex, and the elytra ogival at tip; apex of the prosternum entering a deep transverse mesosternal fossa; metasternum extremely short between the middle and hind coxæ; abdomen as long as the entire remainder of the body, with subequal segments and straight distinct sutures, the first fine medially; met-episterna short and very broad; hind coxæ rather small, oval, attenuate externally, attaining the met-episterna but not closely approaching the sides of the body; tarsi slender, cylindric, sparsely hispid, 5-jointed throughout, not

lobed, the first joint about one-half longer than the second, the claws well developed, rather slender, more strongly arcuate basally. The species may be known by the following characters:

- Upper surface never deeply, though sometimes rather evidently, punctate. 2
- Upper surface deeply punctate. 6
- 2—Color bright metallic green. 3
- Color pale brownish-testaceous throughout, without metallic reflection. . 5
- 3—Elytra much longer, oblong, almost three times as long as the prothorax and with somewhat coarse, distinct and subentire impressed lines. Rather elongate, subparallel, the elytra but little wider than the prothorax, polished, black, with strong green lustre, the under surface black, shining but non-metallic; the legs pale brown; head almost evenly, feebly convex, with remote and feebly impressed punctures; prothorax twice as wide as long, the sides rounded, becoming parallel in about basal half, converging anteriorly, the surface strongly convex, even, with small and very sparsely scattered, feebly impressed punctures, each bearing a moderately long fine erect hair; scutellum glabrous; elytra a little less than one-half longer than wide, oblong-oval, the sides parallel and very moderately arcuate, rounding and converging much more rapidly in barely apical third to the rather obtusely ogival tip, the surface with feebly though distinctly and broadly impressed, minutely, sparsely punctate lines, the subconvex intervals each with a sparse uneven series of larger but feeble, more asperate punctures, bearing rather long erect hairs; under surface sparsely, feebly and irregularly punctate. Length 2.7–3.3 mm.; width 1.3–1.7 mm. British Columbia (Metlakatla).—J. H. Keen. Abundant. *striolatus* n. sp.
- Elytra shorter, more oval, more inflated, never much more than twice as long as the prothorax, less punctured and never with very obvious impressed lines. 4
- 4—Stout, the hind body only very moderately inflated, black, with polished green lustre, generally more æneo-viridate anteriorly, blackish beneath, the abdominal apex and legs pale brown; head with very feeble remote punctures, obsoletely impressed along the median line of the vertex; prothorax slightly less than twice as wide as long, the sides broadly rounded, converging anteriorly, becoming a little more rounded and subparallel only in about basal third, the surface very convex, even, very finely and remotely, scarcely visibly punctate, the short erect hairs generally denuded; elytra barely a third longer than wide, a sixth or less wider than the prothorax, widest well before the middle, the sides broadly, evenly rounded, gradually converging but constantly more rapidly to the rather acutely ogival apex, the surface with feeble traces of impressed lines, which are much finer than in the preceding, the interstitial punctures very small, sparse and scarcely distinct, each bearing a moderately long erect hair; under surface nearly as in *striolatus*. Length 2.7–3.0 mm.; width 1.35–1.55 mm. British Columbia (Metlakatla).—Keen.
- keeni* n. sp.

- Stout, more posteriorly inflated, very convex, similarly colored and with similar polished metallic reflection; head smaller, evenly convex, the very remotely scattered and feeble punctures more evident anteriorly; prothorax convex, distinctly less than twice as wide as long, the sides evenly converging and very evenly, moderately arcuate from base to apex, not becoming parallel basally, the punctures very fine and sparse; elytra more oval and inflated, about a fourth longer than wide, widest slightly before the middle, where they are more than a fourth wider than the prothorax, the sides evenly, rather strongly rounded, rapidly more converging posteriorly to the apex, which is more acutely ogival than in the two preceding, the impressed lines invisible, the series of well spaced and feeble punctures evident, each puncture bearing a rather long erect hair, these being rather more abundant and more persistent than in the two preceding; under surface shining, with small and very sparsely scattered punctures. Length 2.65 mm.; width 1.5 mm. Vancouver Island (Victoria). *æquabilis* n. sp.
- 5—More narrowly oval and more acuminate behind than in any of the preceding, pale in color, polished throughout, the punctures of the head and pronotum much larger and more numerous though widely separated; head evenly convex; prothorax about twice as wide as long, strongly convex, the sides broadly rounded, converging anteriorly, becoming subparallel in about basal half; elytra nearly three times as long as the prothorax and scarcely a sixth wider, widest well before the middle, the sides broadly rounded, gradually converging and rounded to the apex, which is more produced and acutely ogival than in any of the preceding, the surface without trace of impressed lines but with rather regular and widely spaced series of large but feeble, well spaced punctures, each bearing the usual long erect bristling hair; under surface sparsely punctured, pale ochreous, the abdomen acuminate posteriorly. Length 2.2–2.8 mm.; width 1.1–1.3 mm. Idaho (Cœur d'Alene),—Wickham. *pallidus* n. sp.
- 6—Oblong-ovate, viridi-æneous above, shining, sparsely pilose, with deep, widely scattered punctures; head convex, the front with a subcanaliculiform impression; prothorax transverse, "elevato-pulvinato"; elytra with the margin reflexed; legs and antennæ rufopiceous; under surface violaceous. Length 2.6–3.0 mm.; width 1.3–1.5 mm. Alaska (Sitka). Under bark of dead trees, rare. [*Simplocaria nitida* Mots.—Bull. Mosc., 1845, IV, p. 362]. Above description transcribed from Mannerheim,—Bull. Mosc., 1852, p. 342. *nitidus* Mots.

There can apparently be but little doubt that the species named *Simplocaria nitida*, by Motschulsky, belongs to this genus, and its assignment to *Simplocaria* was probably due to the feebly impressed elytral lines noted in some of the above species but which are not mentioned by Mannerheim. I do not however quite comprehend

the expression "elevato-pulvinato," in describing the prothorax. The species are evidently numerous and it is scarcely probable that *nitidus* can be here redescribed under another name.

Amphicyrta Erichs.

Eucyphus Mann.

The body in this genus is notably large for the present family, with the hind body inflated and the upper surface very convex and glabrous. The head is moderately convex, arcuato-truncate at apex, the edge sharply beaded, the labrum large, moderately transverse, arcuato-truncate at tip and not or very feebly sinuate medially; it is joined at base to the front by an upwardly sloping band of dense coriaceous structure. The mentum is moderate, the mandibles bifid at tip and the apex of the fourth maxillary palpal joint is obliquely truncate and also subbifid. The prosternal process is beaded at the margins and its apex is rather acutely rounded, not entirely filling the deep mesosternal fossa. The hypomera are very broad, flat, parallel, separated anteriorly from the prosternum by a very deep and gradually attenuate open fissure; the episterna seem to be reduced to a thick margin at the inner posterior part of the hypomera and are attained by the transverse coxæ; the lateral edge of the pronotum is moderately acute and continues to the apical angles, which are not prolonged anteriorly. The metasternum between the middle and hind coxæ is rather long and the hind coxæ are transverse, attaining the very small met-epimera very near the sides of the body, the met-episterna only moderate in width. The abdomen has all the sutures distinct and rectilinear throughout the width and all the segments of subequal length. The legs are rather long and heavy, the anterior tibiæ with a broad shallow and polished, gradually evanescent groove on the anterior side externally and nearly attaining basal fourth, the other tibiæ with narrower external grooves for the partial shelter of the retractile tarsi in repose; the tarsi are densely clothed beneath with rather short, very pale hairs, the basal joint of the posterior longer than the next two, the fourth very small as usual and the strongly arcuate claws are slightly dilated and internally angulate at base. The scutellum is well developed, ogival and a little longer than wide. The antennæ are very long, filiform and somewhat compressed;

they are inserted at the extreme sides and front of the head and at only a slight distance before the eyes, which are large, rather convex, evenly oval and shorter than wide. The male is smaller and narrower than the female.

Of this anomalous genus there seem to be five species and a few subspecies in my collection, which may be described as follows:

Elytra even in surface or with but feeble traces of inequality, evenly punctured.....2

Elytra with irregular indentations, which for the most part assume a linear arrangement, the indentations having some punctures irregularly placed which are slightly larger than the regular punctuation.. 4

2—Color always pale castaneous; form oval, shining; head well developed, not coarsely, evenly punctate, the eyes prominent; antennæ very long and slender, almost perfectly filiform, pale ochreous, the penultimate joint much elongated, the second shortest, one-half as long as the third as usual, the latter longer than any of the succeeding joints except the last; prothorax convex, scarcely twice as wide as long, the sides moderately converging and feebly, very evenly arcuate from base to apex, the punctures fine, separated by two to four times their diameters, barely at all stronger or closer laterally; elytra a little more than a fourth longer than wide, widest at about the middle, where they are nearly one-half wider than the prothorax, the sides parallel and very evenly rounded, very obtusely and broadly rounded at apex, the punctures like those of the pronotum though a little larger and more indefinitely impressed as a rule; under surface shining, glabrous, finely, sparsely punctured, the metasternum more coarsely and closely laterad. Length (♂, ♀) 7.7–9.0 mm.; width 4.7–5.5 mm. California (northern coast regions). Abundant. [*Amphicyrta chrysomelina* Er.,—Germ. Zeitschr., IV, 1843, p. 40].

chrysomelina Erichs.

A—Similar to the preceding but more elongate and more oblong, the head similar, the antennæ even a little longer, extending still further behind the base of the elytra; prothorax somewhat wider, more than twice as wide as long, the similarly arcuate sides rather more strongly converging from base to apex, punctured as in *chrysomelina*, the scutellum a little larger, acutely ogival, closely punctate; elytra more elongate and more oblong, at the middle barely two-fifths wider than the prothorax, the sides parallel and nearly straight, rounding gradually basally and apically, the apex still more broadly rounded, similarly punctured. Length (♀) 9.3 mm.; width 5.6 mm. California (coast regions north of San Francisco).....**oblonga** n. subsp.

B—Similar to *chrysomelina* but smaller and with a notably smaller head, the antennæ more brownish and with the joints not quite so elongate, the penultimate (♂) not quite one-half longer than wide; prothorax formed nearly as in *oblonga*, rather more than twice as wide as long; elytra as in *chrysomelina* but less greatly

exceeding the prothorax in width, the sides arcuate. Length (♂) 6.6 mm.; width 3.9 mm. California (coast region north of San Francisco)..... **parvuliceps** n. subsp.

Color black, with feeblest piceous tinge and with very strong polish and feeble subæneous lustre above, piceous-black beneath, the legs rufo-piceous; form much narrower and more elongate than in *chrysomelina*, almost evenly oval, the head moderate, with prominent eyes, the antennæ long, filiform, ochreous, all the joints much elongated; prothorax formed as in *chrysomelina*, very convex, the punctures somewhat stronger; scutellum narrower, more elongate and more acutely ogival, with a very few sparsely scattered and exceedingly minute punctules; elytra more elongate, evenly oval, with arcuate sides and less broadly obtuse apex, almost one-half longer than wide, at the middle two-fifths wider than the prothorax, the surface very indefinitely uneven and with unusually fine and sparse punctures, the larger punctures toward the sides of the prosternum more widely separated than in the preceding forms. Length (♀) 8.4 mm.; width 4.8 mm. California (Mt. Diablo)... **elongata** n. sp.

Color always black or feebly picescent above, the under surface but little less deep black, the legs rufo-piceous; body always much smaller than in the preceding species, the lustre strongly shining but without metallic reflection of any kind.....3

3—Oval, very moderately elongate, somewhat piceous-black, the head well developed; antennæ evidently shorter than in the preceding forms, more compressed, broader apically and more evidently though very gradually narrowed from apex to the first joint, the tenth barely a fourth longer than wide, ferruginous throughout; prothorax nearly as in *chrysomelina*, not quite twice as wide as long, similarly punctured but with the similarly converging sides rather less arcuate; elytra barely a fourth longer than wide, oblong-oval, with broadly rounded sides, very broadly and obtusely rounded at tip, the sculpture more cribrate, the punctures larger, deeper and rather closer, separated generally by about twice their widths; under surface nearly similar. Length (♂, ♀) 6.0–8.0 mm.; width 3.8–5.0 mm. California (San Francisco and northward). [*Amphicyrta dentipes* Erichs.,—l. c., 1843, IV, p. 40; *hybosoroides* Mann.,—Bull. Mosc., 1843, II, p. 287 (*Eucyphus*—Tenebrionidæ)].

dentipes Erichs.

Oval, still shorter than in the preceding and deeper black in color, the head notably smaller in relative size, the ochreous antennæ much longer, more slender and filiform, nearly as in *chrysomelina*, only very feebly broadening from the second joint, the penultimate joint about one-half longer than wide; prothorax much shorter than in *dentipes*, a little more than twice as wide as long, the converging sides very evenly but only just visibly arcuate, the punctures moderately small, deep and less separated than usual; scutellum flat, sharply ogival, sparsely punctulate; elytra (♀) barely visibly longer than wide, oblong-oval, with rounded sides and very broadly rounded apex, two-fifths wider than the prothorax or (♂) about a

fourth longer than wide, less broadly rounded at apex and less than a third wider than the prothorax, the punctures rather close-set and conspicuous; abdominal punctures larger and more numerous than usual. Length (♂, ♀) 5.8–7.0 mm.; width 3.6–4.7 mm.

California (coast regions north of San Francisco)....*gentilis* n. sp.

- A—Stouter than the preceding, with relatively narrower prothorax and much more inflated hind body, deep black; head and prothorax nearly similar, the sides of the latter rather more converging and deflexed apically; antennæ ochreous, nearly similar; scutellum more acutely ogival; elytra more oblong, about a fifth longer than wide, the parallel sides but very feebly arcuate though notably more rounding basally to the base of the prothorax than in any other species, very broadly rounded at apex, fully one-half wider than the prothorax, the punctures impressed, separated by rather less than twice their own widths; abdominal punctures finer and sparser as usual. Length (♀) 7.5 mm.; width 4.8 mm. California (locality as in the preceding).....*ventricosa* n. subsp.

- 4—Stout, oval, moderately shining and piceous-black above, shining and much paler piceo-testaceous beneath; head well developed, largely retracted within the prothorax in the type, the ochreous antennæ long, very slender and filiform, nearly as in *chrysomelina*; prothorax very convex and almost vertically declivous latero-apically, distinctly less than twice as wide as long, the converging sides straight, becoming arcuate only at base, the punctures small but strong, rather more close-set than usual and more noticeably larger toward the sides though not very markedly so; scutellum elongate-ogival; elytra oval, nearly a third longer than wide, widest rather behind the middle, the sides broadly arcuate, very broadly rounded and obtuse at apex, the punctures unusually large, deep and close-set throughout; abdomen finely, sparsely and rather feebly punctate. Length (♀) 9.2 mm.; width 5.7 mm. Western Nevada.
nevadensis n. sp.

The above species are for the most part somewhat "opinionative" perhaps, because of the absence of distinctive structural modifications, this being more marked even than in *Byrrhus*, for there is no vestiture of any kind to afford diversification, except the dense golden hairs covering parts of the tibiæ and the tarsi. I think however that the names assigned above stand for forms that can be recognized, and some of them—those proposed as species—seem certainly worthy of adoption. Individuals are not rare and we therefore have the benefit of series in coming to a conclusion in most cases.

Tribe LIOONINI.

There is but a single genus in this tribe, which resembles the preceding in general structure but differs in the very broad and

remarkable elytral epipleura, which are without even a suggested approximation elsewhere in the entire family. This genus may be described as follows:

Lioon n. gen.

Body oviform, convex, subglabrous or with very sparse erect hairs; head nearly as in the preceding tribe, short, the eyes well developed, moderately convex, strongly and densely faceted, rather pointed beneath, the front with a broadly arcuate, even, strongly elevated and acutely beaded edge from eye to eye, the pseudo-epistoma projecting rather inferiorly as a short, transverse, smooth and flat truncate plate, the labrum transverse, deeply sinuate medially at apex. Mandibles broad, strongly arcuate, the apices truncate, very wide and having five acute and subequal teeth arranged in a nearly straight line throughout the entire width. Mouth organs moderate, the fourth maxillary palpal joint slender, gradually finely attenuate and unimpressed. Antennæ moderately short, not much compressed, inserted at the extreme sides and front of the head under the strong marginal beading, slender basally, gradually enlarged through the last five joints, the three penultimate rather transverse, the last oval, the third not very much shorter than the first two combined, the first smaller than usual in the preceding tribe. Prothorax nearly as in *Amphicyrta*, truncate rectilinearly at base, the sides with an acute edge to the apical angles, which are acute and feebly produced at the eyes from above, the surface very steeply sloping antero-laterally; scutellum moderate, acutely ogival; elytra short, very obtuse, sparsely punctate, without trace of impressed lines. Prosternum broadly arcuate posteriorly, the end of the notably wide process gently rounded and filling the entire mesosternal emargination, the hypomera very wide, parallel, demarcated anteriorly by a deep open fissure; mesosternum very short between the middle and posterior coxæ; met-episterna narrow, scarcely distinct. Abdomen rather narrow, with straight distinct sutures and subequal segments; coxæ very small, oval, very widely separated, the posterior but little wider than long, not even attaining the very broad epipleura, separated therefrom by half their own width. Legs moderate in length, rather slender, the tibiæ unmodified, the tarsi not retractile, slender, rather long, subcylindric, sparsely setulose on the under

surface, the third joint briefly oblique beneath the fourth but not strictly lobed, the basal joint of the posterior as long as the next two combined, the claws small, slender, feebly arcuate, straighter basally.

It will be noted that in most of its characters, and especially the small oval coxæ, the tarsi and the antennæ, this singular genus bears a much closer resemblance to *Lioligus* than it does to *Amphicyrta*; the mandibles are remarkably specialized. The species seem to be four in number and may be defined as follows:

Color pale brownish-testaceous, polished, with a feebly cupreous gloss, the under surface, legs and antennæ still paler and without metallic lustre; upper surface subglabrous, each puncture bearing an extremely small and fine subdecumbent or recurved hair, only visible on close observation; head with sparse though rather large punctures and with three large indentations, to some extent adventitious perhaps; prothorax very convex, twice as wide as long, the sides rounded and subparallel in basal, becoming strongly converging and straighter in apical, half, where the sides are subcompressed, the punctures everywhere sparse and extremely minute; elytra not quite as long as wide, parallel, with rounded sides and very broadly rounded apex, slightly more than twice as long as the prothorax and, at the middle, evidently wider, the punctures very sparse and minute though more visible than those of the pronotum; under surface throughout shining, minutely and very sparsely punctulate, the last ventral more coarsely but not densely. Length 3.7 mm.; width 2.3 mm. British Columbia (Metlakatla),—Keen.....**speculare** n. sp.

Color black or blackish, the upper surface with more or less metallic gloss. 2

2—Oval, stout, strongly convex, polished, piceous-black, with feeble and variable metallic glint above, testaceous throughout beneath, the antennæ somewhat infumate distally; punctures of the upper surface bearing each a short but rather coarse and very distinct pale hair, those of the head and pronotum subdecumbent, on the elytra more erect and hispid; surface of the pronotum with very large and rather feeble micro-reticulation, obsolescent on the head and completely wanting on the elytra; head rather coarsely and closely punctate, having a broad and feeble impression along the middle near the base; prothorax distinctly less than twice as wide as long, less compressed anteriorly than in the preceding though very declivous, the sides moderately converging, very evenly and feebly arcuate from base to apex, the punctures well separated though only moderately small, rather shallowly impressed but very distinct; elytra very short, much shorter than wide, not quite twice as long as the prothorax and, at the middle, evidently wider, parallel, with evenly arcuate sides and very broadly rounded apex, the surface vertical, even becoming inflexed apically as in the preceding, so that the actual

apex is not visible from a vertical viewpoint, the punctures rather sparse but impressed and very distinct; under surface shining, finely, sparsely punctate and with fine sparse hairs. Length 3.2-3.5 mm.; width 2.2-2.3 mm. California (Arcata, Humboldt Co.).

puncticeps n. sp.

Oval, subglobose, shining, cupreo-æneous above; head sparsely punctate, the front unequal, with a median lineolate impression; prothorax extremely smooth, sparsely pilose toward the sides, narrowed and compressed anteriorly, the anterior angles lobate, produced; elytra very sparsely punctulate, declivous posteriorly, the apex rounded; antennæ, legs and under surface of the body piceo-testaceous; anterior tibiæ unarmed. Length 3.5-4.0 mm.; width 2.7-3.0 mm. Alaska (Sitka). [*Amphicyrta simplicipes* Mann.,—Bull. Mosc., 1852, p. 342].....**simplicipes** Mann.

Rounded-ovate, much inflated, very convex, blackish-æneous, shining, clothed with slender erect pale hairs; head and prothorax finely punctured, the former the more strongly; prothorax more than twice as wide as long, strongly narrowed in front and much rounded at the sides, the apex broadly rounded, the base truncate, the apical angles sharp from above owing to the compression of the sides, the basal angles nearly right; elytra feebly and finely punctured, not at all striate, a little wider than the prothorax and but little longer than wide, much deflexed behind and conjointly rounded at apex; under surface piceo-testaceous, the legs and basal parts of the antennæ still paler, the last five joints of the latter obscure. Length 4.5 mm. California. [*Simplocaria inflata* Lec.,—Tr. Am. Ent. Soc., 1868, p. 62].**inflatum** Lec.

Both *speculare* and *puncticeps* are materially smaller than either *simplicipes* or *inflatum*, and *speculare* is further distinguished from any other by its pallid coloration and infinitesimal hairs of the upper surface, which could readily be overlooked. *Puncticeps* differs from *inflatum* in its smaller size, apparently shorter elytra and less transverse prothorax, stronger, closer sculpture and rather shorter vestiture, though this is pale, distinct and hispid. There can be no doubt, I think, that *Amphicyrta simplicipes* and *Simplocaria inflata*, which are certainly not specifically identical, belong to this genus, and under this assumption the failure to notice the extraordinary epipleura, the most conspicuous feature of the under surface, by both Mannerheim and LeConte, is most unaccountable.

II—A REVISION OF THE AMERICAN GENERA OF THE TENEBRIONID TRIBE ASIDINI.

In publishing the following study, it is primarily with regret that so many of the described species are still unknown to me. After using every endeavor to bring together as full and representative a series as could be obtained, through the generous and substantial aid of several well-known collectors, I find quite a number of the aberrant forms described by LeConte and Horn still missing, and the proper assignment of these species in the taxonomic scheme here proposed has in many instances been largely a matter of inference; but it is hoped, at any rate, that the original descriptions of these desiderata, which are given in nearly every instance, may render this revision at least of some utility in bringing these scattered descriptions together for convenient reference. Although actually numerous, the number of missing species is however proportionally very small, for in the following pages 212 species and subspecies are listed, excluding 10 described from Mexico, of which only 60 species and subspecies, known and unknown to me, had been previously described, an increase of about three and one-half fold. Those still unknown to me in nature will probably remain so for many years, owing to their extremely local range and the exceptional rarity of most of them; the type of *Microschatia sulcipennis*, for example, has remained a unique since it was originally described about half a century ago.

In the Asidini the body is large to moderately small in size and with great variety of sculpture, from almost perfectly smooth to very rough; the elytra are frequently costate and the integuments often coated with so dense a crust of earthy matter that it is impossible to remove it, this crust really becoming almost a part of the integument, through which the short bristles protrude regularly and without detriment to their tactile function. The head is inserted to the eyes, which are very transverse, more or less coarsely faceted and generally convex; but they may become nearly flat and extremely short as in *Pycnonotida*, and, in the *convexicollis*

group of *Euschides* they become notably larger and less transverse; their anterior margin varies from evenly and broadly arcuate, as in *Glyptasida* and *Pelecyphorus*, to broadly sinuate somewhat below the middle as in *Euschides* and the other genera of that part of the series, and in the very aberrant *Litasida* it becomes more deeply sinuate. The epistoma is sinuato-truncate, the labrum well developed, generally sinuate at the middle of the apex, the mandibles thick, externally punctate and puberulent basally, rather rapidly acuminate and nude apically and with the tip invariably bifid. The antennæ are rather short, as a rule, with joints nine and ten, or sometimes only the tenth, wider, the eleventh always smaller and more or less imbedded in the concave apex of the tenth, although as a singular exception the European *Globasida* Escal., has the eleventh joint almost as large as the tenth and perfectly free though closely joined to the tenth along a broad base; this remarkable character may however be to some extent sexual, as the female is not in my collection at present. The depressed patches of tomentum on the apex of the tenth joint and involving the entire apex of the eleventh are constantly present. The mentum is large to moderate in size, narrowed toward base or transversely subquadrate, inserted upon a distinct gular extension or pedestal or not, its apex transverse and medially sinuate; it may fill the entire buccal opening, cover all the mouth organs and closely fit against the closed mandibles as in *Astrotus*, or leave most of the mouth parts exposed at its sides and apex as in *Euschides* and many other genera. The prothorax is always much wider than the head and sinuate at apex, with more or less anteriorly prominent angles and it is nearly always narrower than the elytra, the latter generally widely, or better perhaps, deeply, embracing the sides of the body beneath, though narrowly so in a few cases such as *Microschatia* and related genera, *Litasida* and the European *Asida hesperica*, which, on this account, should probably be separated generically. In *Pelecyphorus* the hind body is often greatly inflated when compared with the anterior parts. The legs are comparatively thin and relatively weak, giving slow and heavy movements in locomotion; the coxæ are transversely oval to subglobular and the tibial spurs short. The trochantin is inconstant, usually large and distinct but sometimes wholly obsolete, as noted in the table given below.

As is well known, our territories west of the 100th meridian are very broken, and include many isolated mountain crests and valleys having between them no direct communication. Within these local environments primitive stocks become modified in the course of time, and if the isolation has been sufficiently long continued and the evolutionary stimuli potent enough, may result in forms so distinct as to demand recognition as subspecies, species or even genera, as in the case of the animals and plants now inhabiting the islands off the coast of California. Reviewers of the Coleoptera as a rule have not sufficiently considered these facts, generally holding such heterogeneity in their material to be due simply to fortuitous variation because of inherent plasticity, whereas in reality true variation is a term properly applicable only to departures from the mean among individuals inhabiting a common environment. I find that this kind of inconstancy or instability characterizes the species of Tenebrionidæ but little more than it does the Carabidæ for instance,* for in all cases where it has been possible to secure series of individuals taken together in the same locality, no divergence sufficiently notable to give rise to doubt as to specific status can be observed among the material serving as the basis of this revision. Each species may have some particular character which is especially variable, such as the longitudinal extent of the reflexed elytral margin in the males of *Asidopsis cochisensis*, for example, though the summation of features constituting facies or habitus remains quite fixed.

Having gradually accumulated my rather extensive material in the Asidini from many collectors, each of whom has generally sent but one or two examples from his series of any particular species, it naturally results that a large proportion of the forms now making up this material must be in uniques, so far as my collection is concerned. This is of course the condition to greater or less degree

* Individual instability in the Tenebrionidæ is admittedly somewhat more obvious than in such a family as the Carabidæ, as indicated by the greater inconstancy of form, as well as by the evidently greater tendency of the species to become modified by altered environmental conditions. I have, for example, found *Harpalus caliginosus* represented by absolutely similar individuals on the Atlantic coast and in the mountains of northern California. More recently evolved types of animals incline to plasticity and instability to a greater degree than older and more established types, and this is therefore an additional reason for considering the Tenebrionidæ a comparatively recent development in the Coleoptera, as stated further on by way of other reasoning.

with all the larger collections, and in all other families as well as the Tenebrionidæ, and in arranging these collections into species, assortments of more or less discordant individuals are usually placed under a single specific name, under the assumption that the exceptional forms are merely accidental variations. As the departures from the normal or typical are particularly numerous in the Tenebrionidæ, it has been too hastily assumed that that family is especially subject to inconstancy or plasticity affecting outline, sculpture and other characters, which may be of a more definitive nature elsewhere, overlooking the fact that the Tenebrionidæ inhabit almost exclusively dry and arid mountainous regions having extremely varied environments, which alone should account for the observed incongruities. A similar multiplication of closely allied forms is, in greater or less degree, noticeable in most of the families inhabiting such regions. As above intimated this is not variation as understood in the Darwinian theory of evolution, though frequently so misconstrued; it is evolution through isolation, which is by far the most universal method of species forming. When the process has not proceeded very far the resulting forms are frequently termed incipient species; I have here designated them subspecies, but it must be clearly understood that the exact status of these departures from the normal is by no means certain, or ascertainable through our present sources of information.

In reviewing what has been accomplished in the taxonomy of the Asidini thus far, we are forced to acknowledge a certain superficiality of observation, which has contented itself by characterizing its primary genus as one of those "polymorphous aggregates," occasionally intruding themselves to vex us in our course of classification by way of preconceived methods, or by systems of generic differentiation applicable elsewhere in the series. An exceptionally erratic, and I am sure considerably overestimated, inconstancy of the species has been generally maintained, as before stated, so that virtually the only forms described thus far, excepting a few early discriminative efforts on the part of LeConte,—subsequently degraded or lost in the limbo of synonymy,—are very widely separated and uncorrelated species. On studying these isolated landmarks, with due regard to their comparative structural characters, the fact becomes evident that what have been put forward ostensibly

as species of a single genus in our fauna, are for the most part in actuality so many generic or quasi-subgeneric types, the real species and subspecies being, as a general rule, these so-called erratic variations. The complete proof of this is certainly to be seen in manifold instances in the material now in hand, and, among other things, it proves some of the early conceptions of our predecessors, such as the taking on or loss of granules and other permanent modifications of the chitinous exoskeleton, or the transformation of one widely distinct species into another, as a consequence respectively of seasonal change or through stages of true variation (Horn—Rev. Ten., pp. 284, 287,—under *Asida actiosa* and *A. captiosa*; also, recently, Proc. Cal. Acad. Sci., ser. 2, IV, p. 345—under *Edrotes*) to be visionary and unwarrantable.

In accordance with the observations and reasoning above stated, I here suggest the following scheme of genera of the tribe Asidini, so far as known to me at present, those which are foreign to America being indicated by the asterisk. Under the apparently prevailing opinion of systematists regarding generic and specific weight in the Coleoptera, most of them will probably be held to be rather subgenera than genera and in a very few cases this may quite possibly be true, but the large majority of them are, in the opinion of the writer, as definite as those now acknowledged by general consensus to be valid in almost any other section of the Tenebrionidæ:

- Coxæ more or less widely separated. North America.....2
 Coxæ more or less narrowly separated, always notably more approximate than in the preceding section. Palæarctic faunal regions, including northern Africa. 21
 2—Mentum entirely filling the buccal opening and without trace of pedestal; body generally coated densely with earthy matter.....3
 Mentum not entirely filling the buccal opening and always placed upon a more or less evident pedestal formed by a gular prolongation....4
 3—Mentum covering completely all the mouth-parts, fitted closely to the sides of the opening and contiguous to the mandibles when closed; trochantin wanting; sculpture of the elytra very rough and uneven; prosternum porrect and obtuse between the coxæ. [Type *A. contortus* Lec.].....**Astrotus**
 Mentum closely fitted to the sides of the buccal opening, completely concealing the ligula and nearly or quite attaining the closed mandibles; elytra with straight and fine dorsal ridges and side margin; prosternum deflexed posteriorly. [Type *S. graciliformis* Sol.].
Stenosides
 4—Ligula small, generally flat, angularly emarginate to subtruncate

- and strongly retractile, usually almost or quite hidden under the mentum, the latter always clearly separated from the closed mandibles. 5
- Ligula larger, tumid, angularly incised; mentum always separated from the closed mandibles, generally also leaving the maxillary cardo in considerable part exposed. 10
- 5—Last joint of the maxillary palpi small in both sexes, as in the preceding genera, and never larger and scalene in the male; body roughly and irregularly sculptured but only occasionally coated with earthy matter. 6
- Last joint of the maxillary palpi large and scalene in the male, smaller and recti-triangular in the female; prosternum deflexed; body diversely sculptured though generally clean, very much larger in size. .7
- 6—Trochantin minute; prosternal process deflexed between the coxæ; head and prothorax relatively small; antennæ and tarsi slender; elytra with anastomosing ridges, rather widely inflexed beneath. [Type *Asida anastomosis* Say]. (*Ologlyptus* Lac.)....**Pactostoma**
- Trochantin well developed; prosternal process porrect; head and prothorax relatively large; body very convex, generally roughly and unevenly sculptured, the elytra narrowly inflexed beneath; antennæ and tarsi stout. [Type *Microschatia inæqualis* Lec.]...**Pycnonotida**
- Trochantin, antennæ, tarsi and prosternal process nearly as in *Pycnonotida*; mentum broader, extending beyond the sides of the buccal opening anteriorly; labrum much more deeply sinuate; body less convex, smoother, the elytra with nearly regular rows of coarse punctures, sometimes sulcate. [Type *M. punctata* Sol.].
- Microschatia**
- 7—Tarsi with short and inconspicuous spiniform hairs beneath. 8
- Tarsi with very long, decumbent and conspicuous fulvous pubescence beneath. 9
- 8—Base of the prothorax broadly bisinuate; elytra each with two distinct and subequal discal costæ. [Type *Pelecyphorus sordidus* Lec.].
- Glyptasida**
- Base of the prothorax truncate or arcuato-truncate, the basal angles more or less acute and prominent but more minutely and less posteriorly so than in *Glyptasida*, the head and prothorax generally smaller relatively, giving the body a markedly different habitus; elytra each with a single distinct discal ridge, the inner ridge of the preceding genus obsolescent. [Type *P. mexicanus* Sol.]. (*Philolihus* Lac.)**Pelecyphorus**
- 9—Body more elongate and subcylindric-oval, more nearly as in *Euschides*, the sides of the prothorax broadly, angularly dilated and reflexed, in a manner wholly peculiar; mentum large and subquadrate as in the two preceding genera; elytra without marked ridges. [Type *Pelecyphorus elatus* Lec.]....**Gonasida**
- 10—Prosternum deflexed posteriorly between the coxæ. 11
- Prosternum porrect and prominent posteriorly. 20
- 11—Last joint of the maxillary palpi large and scalene in the male, smaller and recti-triangular in the female. 12

- Last joint of the maxillary palpi differing but little sexually, never more than recti-triangular in the male.....15
- 12—Base of the prothorax bisinuate, the basal angles acutely and posteriorly prominent.....13
- Base of the prothorax more or less conspicuously and broadly lobed, becoming anteriorly oblique toward the sides, with the basal angles obtuse, sometimes evident but never prominent.....14
- 13—Elytra coarsely clathrate in about three series on each, the lines of separation scarcely at all costiform, the humeri obtusely rounded, not reflexed; anterior parts small when compared with the hind body as in *Pelecyphorus*, the prothorax sinuately constricted basally; antennæ with sparse thin hairs, silvery in the type. [Type *Asida clathrata* Champ.].....***Bothrasida**
- Elytra having confused sculpture, with about three feeble ridges usually discernible on each, the two inner ridges frequently geminate, especially in the male; humeri obtuse but distinct, not broadly rounded, generally in great part covered by the thoracic angles; body more parallel and with relatively larger anterior parts as a rule; antennæ herissate with stiff spinuliform dark hairs. [Type *N. abstrusa* n. sp.].....***Notiasida**
- Elytra each with three very regular ridges or carinæ, the inner carina rarely becoming obsolete and the outer generally not attaining the base; thoracic and sometimes also the elytral base fringed with dense pale tomentum; body parallel or with the elytra but feebly inflated; antennæ as in *Notiasida*. [Type *P. laciniata* n. sp.]....**Parasida**
- 14—Body more or less large in size, elongate, convex and fusoid-cylindric or broadening posteriorly, clean and never incrustated with earthy matter, the mentum rather small as a rule though variable, usually not attaining the sides of the buccal opening; antennæ herissate with stiff hairs; tarsi with short sparse spinules beneath; elytral margin very variable, the surface smooth to costate. [Type *E. obovatus* Lec.].....**Euschides**
- 15—Antennæ unusually long, very gradually and evenly thickened to the end of the tenth joint, the latter wholly spongiose at tip by coalescence of the tomentose areas; anterior tibiæ scarcely at all prominent externally at tip, the tarsi spinulose beneath; elytra with true cariniform costæ though at the sides only. [Type *Pelecyphorus bifurcus* Lec.].....**Heterasida**
- Antennæ more rapidly enlarged distally, the tenth joint with the usual two widely separated tomentose spots at tip.....16
- 16—Elytra with true costæ, which are sharply elevated and cariniform, confined however to the lateral part of the upper surface as in *Heterasida*; body parallel to narrowly suboval, depressed on the upper surface and with minute and inconspicuous hairs; anterior tibiæ not or scarcely serrulate externally, the outer angle moderately to scarcely at all everted; antennæ more or less slender, gradually enlarged subapically through joints nine and ten; mentum strongly transverse, in close contact with the sides of the buccal opening, which are unusually short. [Type *Pelecyphorus parallelus* Lec.].....**Asidina**

Elytra without true costæ, the elevated lines when present having more the nature of narrowed and accentuated obtuse ridges. 17

- 17—Body more or less evidently pubescent, the mentum rather small, loosely fitted in the buccal opening, with free space at the sides, the gular pedestal long and well developed; antennæ very slender, with the tenth joint abruptly wider, nearly as in normal European *Asida*; basal angles of the prothorax never prominent; anterior tibiæ generally serrulate externally, the outer angle at tip strongly everted and very acutely spiniform. [Type *Pelecyphorus hirsutus* Lec.].

Trichiasida

Body evidently pubescent but with the hairs short, and not simple as in the preceding genus but peculiarly modified; prothorax nearly similar in general form but with sides very broadly reflexed, somewhat as in *Embaphion*; elytra nearly flat, acutely margined at the sides. [Type *Asida embaphionides* Horn]. **Platasida**

Body glabrous or virtually so; thoracic angles variable. 18

- 18—Elytra very narrowly inflexed beneath as in *Microschatia*, forming narrow epipleura,* the body moderately convex, rather small in size, smooth, with strongly reflexed margins; anterior tibiæ very moderately everted externally at apex, spinulo-serrate on the inner but not the outer edge; tarsi unusually long; mentum and palpi nearly as in *Trichiasida*, the antennæ thicker, gradually enlarged distally through joints eight to ten, the latter not abruptly wider; trochantin obsolete. [Type *L. townsendi* n. sp.]. **Litasida**

Elytra widely or deeply inflexed at the sides beneath as usual. 19

- 19—Mentum rather small, leaving much void space between it and the sides of the buccal opening as a rule, the gular pedestal rather long and but moderately wide; body small or moderate in size; anterior tibiæ more or less strongly everted and acute externally at apex, the external edge generally somewhat spinulo-serrate; tarsi moderately long, slender, with short spiniform setæ beneath; antennæ rather stout to moderately slender, well developed, usually gradually enlarged distally. [Type *Asida opaca* Say]. **Asidopsis**

Mentum much larger, tightly filling the buccal opening, the gular pedestal very short and broad, with the aperture at its extremities very small; body large to very large in size; legs nearly as in *Asidopsis*. [Type *Asida obliterated* Champ.]. **Megasida**

- 20—Body elongate, moderately large to small in size, moderately convex to nearly flat above, with or without erect sparse hairs, the elytra not costate as a rule; anterior tibiæ generally slightly serrulate externally, with the outer angle at tip variable but usually distinctly everted and acutely spiniform; tarsi clothed beneath with short stiff inclined hairs; mentum transverse, in loose contact with the

*For the sake of consistency in forming the plural of Greek words such as *elytron*, *meron*, *sternum* and others, it seems best to abandon my heretofore uniform custom of using *pleura*, with the plural *pleuræ*, although the apparent preference of this form by the Greeks themselves was the probable cause of its proposal by Audouin in early days. The example of Audouin was generally followed until recently, there now being an evident tendency to employ the form *pleuron* with plural *pleura*.

- sides of the buccal opening, which is of the usual depth; antennæ more or less slender, with the tenth joint rather abruptly wider. [Type *Pelecyphorus muricatus* Lec.].....**Stethasida**
- 21—Body oblong-oval, moderately convex to subdepressed above, generally covered with a closely adherent earthy incrustation and with short recumbent hairs, sometimes clustered more densely on the elevations, the elytra with distinct reflexed humeri and acute side margins, the surface with interrupted, very sinuous and irregular raised lines or spots, which generally differ sexually, the base of the prothorax having a feebly impressed rounded median lobe and a rather deep sinus at each side; mentum entirely filling the buccal opening, without evident pedestal; antennæ slender, with the tenth joint abruptly wider; anterior tibiæ everted and acute at tip, slightly serrulate externally; tarsi rather short but slender, with short and coarse inclined hairs beneath; prosternum more or less porrect and deplanate between the coxæ. [Type *A. grisea* Fabr.].....***Asida**
- Body throughout nearly as in *Asida* but with the prosternum between the coxæ convex and rapidly declivous to the mesosternum, differing profoundly in the structure of the antennæ, which are slender, with the tenth and eleventh joints subequal in size and abruptly larger than the preceding, being unique in this respect in the tribe; anterior tibiæ bent apically but perhaps only in the male. [Type *G. cartagenica* Escal.].....***Globasida**
- Body more elongate and subparallel, moderately convex, the prothorax and oral organs nearly as in *Asida*, the elytra with a single even discal costa on each and acute side-margins, the integuments clean and not incrustated, the sinuous irregular elevations wanting; anterior tibiæ strongly everted and acute externally at apex; tarsi unusually elongate, with small stiff setæ beneath; antennæ differing wholly from those of the two preceding, stouter, feebly and very evenly increasing in width to the apex of the tenth joint. [Type *A. gaditana* Escal.].....***Alphasida**

Besides these generic groups several others have been proposed, which it is not possible to include in the table because of the lack of special data concerning them. As to *Stenomorpha* Sol., its type, *costata*, which is not a *Euschides*, does not prevent the latter genus from being maintained, although LeConte gave the name as a substitute for *Stenomorpha*, on the ground that the latter name was preoccupied by *Stenomorphus*. In this I cannot agree, and believe that it should not be held to be preoccupied. Still less should *Stenosides* Sol., be considered unavailable, either because of its impropriety or its resemblance to *Stenosis*, as suggested by Lacordaire; but, for much the same reason as in the case of *Euschides* and *Stenomorpha*, the genus named *Ologlyptus* by Lacordaire, which is

however antedated by *Pactostoma* Lec., can be legitimately sustained, since *anastomosis* Say, which was included, although not fitting the generic diagnosis of Lacordaire so well as *graciliformis*, is evidently generically different from the type named *Stenosides graciliformis* by Solier.

The genus *Philolithus*, of Lacordaire, is said to differ from *Pelecyphorus* solely in the absence of a definite everted acute angle at the apex of the anterior tibiæ. This is only measurably true of *carinatus*, the type of *Philolithus*, and in others that must necessarily be included, such as the *ægrotus* and *actuosus* groups, there is evidently an everted and acute angle; so I can perceive no other just course to pursue than to consider *carinatus* congeneric with *mexicanus*, the obviously intended type of the mixture named *Pelecyphorus* by Solier, through such forms as *ægrotus* and *morbillosus*.

Mr. Geo. C. Champion founded a number of new genera among the Mexican species under the names *Sicharbas*, *Zaleucus* (= *Zamolxis* preocc.), *Poliorcetes*, *Ucalegon* and *Tisamenes*, the first of which is related to *Astrotus* and doubtless a very good genus. The others were suppressed by their author in an appendix to the volume of the "Biologia" in which they appeared, but I have scarcely any doubt that some of them are valid and will ultimately have to be resuscitated; they are probably more or less close allies of *Pelecyphorus*. In addition to these genera it is almost certain that at least fifteen others will prove necessary for known aberrant Mexican types and in making allowance for some American species, such as *Microschatia sulcipennis* and *morata* and *Asida subvittata*, *luctata*, *semilævis* and *flaccida*, which will almost undoubtedly necessitate separate genera, as well as for others not yet discovered. As none of the Mexican species belong truly to *Asida*, it would be well, in cataloguing them, to assign provisionally such as are not disposed of generically in the present paper to some of the genera here defined, with which they may apparently be most closely affiliated.

The three European genera at the end of the table are introduced in order to indicate the connection of the old world fauna with the new. There is actually no resemblance whatever between the two faunas in this tribe, and of the eighty or more European and North African species in my cabinet, I cannot recognize one that bears

the faintest resemblance to any American form, showing that species of this tribe, in common with the Tenebrionidæ generally, have independently developed in the new and old world from a few contemporaneous archetypes, during the time which has elapsed since the continental masses were permanently separated. This, among other reasons, tends to prove the Tenebrionidæ to be a comparatively modern type of Coleoptera (see p. 72, footnote).

The European and African species are seemingly as numerous as those of North America, or perhaps even more so, but they form a still more difficult problem for the taxonomist, especially in the differentiation and limitation of the genera, of which there are beyond doubt a considerable number. It is only within a few years that they have been at all discriminatively studied. The genera or subgenera *Globasida* and *Alphasida*, very recently characterized by M. M. de la Escalera, are diagnosed in the above table from *deformis* Escal., and *holosericea* Germ., respectively, as I do not possess their typical species; but the assumed types are probably congeneric in each instance. One of these groups at least, *Globasida*, is associated in the latest European catalogue with many specific types which do not seem to conform to its generic characters, and there are other evidences of lack of careful consideration in that list of species. For example, the Sardinian species named *genei*, by Solier, is evidently distinct from the Corsican *corsica*, but it appears in this catalogue as a complete synonym of the latter, without even the solace of a varietal designation. Again the numerous specific and subspecific forms clustering around certain prominent types, bear evidence of being as completely overlooked as those of our own fauna. In the case of *corsica*, I have four or five distinct forms, some with minute granules on the elytral depressions and one without trace of granulation but, instead, with fine simple close-set punctures, and they differ among themselves in many other ways besides; in *genei* the punctures are coarse and conspicuously different. So also in the cases of *planipennis*, *dissimilis*, *goudoti* and *depressa*, there are many distinctly characterized related forms which have been almost wholly neglected; those in the neighborhood of *sabulosa* are so numerous and closely allied, that, in view of their diversified sexual differences, we encounter difficulties that will probably never be completely unraveled.

As a section of the tribe Asidini the Eurafrian species differ from the American (1) in the marked differences between the sexes, which, in *depressa*, become extreme, there being few Coleoptera in which the sexes become so completely incongruous, (2) in the more narrowly separated coxæ, (3) in the prominence of the intercoxal process of the prosternum, which, though occasionally disappearing as in *reichei*, is nevertheless generally at least traceable, and as characteristic of the old world species as the deflexion of the process is of the American, (4) in the more slender antennæ with the tenth joint more abruptly enlarged, a character which is however subject to some exceptions in both regions, (5) in the almost universally less developed gular pedestal of the mentum, and (6) in peculiarities of sculpture as developed in the more typical species, the tufted tubercles being unknown among the American representatives, although suggested perhaps in the very aberrant Mexican *fasciculata* Champ. The tendency to become coated with indurated and closely adherent mud is also much more characteristic of the European than of the American species, there being however some exceptions among our genera and many notable exceptions in the Mediterranean fauna, such as *depressa*, *dissimilis*, *goudoti*, *politicollis*, *sicula* and other related forms, among which there are assuredly several genera distinct from *Asida*.

Astrotus Lec.

The few known species of this genus have the surface throughout coated densely with indurated earthy matter, which becomes virtually an almost integral part of the integuments and is very difficult to remove; through this coating the minute setæ protrude. The fact that these hairs are not involved in the coating, but are maintained clean and free from such extraneous substance, proves them to possess a tactile function of direct utility as a means of recognizing external impact; they are therefore subject to the laws of natural selection and the diverse forms that they assume in the various genera are of greater value in a taxonomic sense than is usually admitted. This is a general law affecting setæ growing from punctures throughout the Coleoptera, but does not concern so evidently the fine dense pile sometimes present, as on the under surface of the Melolonthinæ for example.

The body in *Astrotus* is moderate or rather small in size, roughly and unevenly sculptured and apparently glabrous under low powers of enlargement. The antennæ are shorter and more moniliform than usual, with the third joint shorter than in any other of our genera, being about twice as long as the second but not longer than the first, the tenth joint spongiose only on the parts left exposed by the small subimbedded eleventh joint. The labrum is moderately transverse and sensibly sinuate. The mentum differs from that of any other American genus, except possibly *Stenosides* and *Sicharbas*, in completely and closely filling the entire buccal opening, being contiguous also to the closed mandibles and is without trace of gular pedestal, nearly as in the European *Asida*; the palpi are moderate or rather small, with the last joint never scalene. The tarsi are short but slender and there is no exposed trochantin. The anterior parts are not so small in relation to the hind body as in *Pactostoma* (= *Ologlyptus* Lac.), the elytra unevenly convex, deeply embracing the body beneath and with the humeral angle distinct though varying in form specifically.

The three species may be known as follows:

Antennæ broadened apically through the ninth and tenth joints. Body rather narrow, only moderately convex; head transversely impressed between the antennal prominences, also with a small median impression on the occiput, the epistoma sinuato-truncate; antennæ a little longer than the width of the head; prothorax about a fourth wider than long, the sides strongly prominent and narrowly rounded at the middle, thence converging and feebly sinuate anteriorly and equally converging and deeply sinuate basally, the base evenly sinuato-truncate throughout, the angles right, slightly blunt, the apex deeply sinuate with the angles bluntly rounded; surface densely, subgranularly sculptured, broadly, feebly concave laterally, tumid medially, with the median line impressed anteriorly, exterior to which there are two small impressions on each slope of the tumidity, also a larger rounded impression before the scutellum, the latter small; elytra three-fifths longer than wide, gradually widening to apical third, the side margins with tubercles and crests, one of which forms the humerus, which is exposed beyond the thoracic base; surface granulate, the suture flat, feebly elevated, each elytron with an uneven medial ridge, connected by anastomosing ridges with the suture and curving at apical fourth to meet a sutural ramus in a stronger elevation, the ridge continued thence to the apex and having an acute tubercle midway; legs rather short, the very short pale stout hairs abundant and conspicuous; anterior tibiæ with an everted and very acute spiniform external angle at apex. Length 11.8–13.7 mm.; width 5.5–6.5 mm. Texas.....**contortus** Lec.

Antennæ broadened apically only through the tenth joint, the ninth nearly similar to the eighth.....2

- 2—Body stout, more oval and more convex, densely coated, the fine ridges and elevations with small, close-set tubercles appearing through the coating like strings of small beads; head more feebly impressed, the occipital impression nearly obsolete, the epistoma more broadly and clearly sinuate, the antennæ not longer than the width of the head; prothorax more transverse, more than one-half wider than long, widest slightly behind the middle, where the sides are less prominent and more broadly rounded, strongly converging and not sinuate thence to the deeply but narrowly sinuate apex, feebly converging but deeply sinuate to the transverse base, which is flexed a little posteriorly laterally, the angles thus acute and sensibly prominent, the apical narrowly rounded; surface broadly, feebly concave laterally, tumid medially, the median line narrowly, subevenly impressed except near base and apex; elytra broader, more oblong, widest slightly behind the middle, the side-margins distinct but not carinate or tuberculose, rapidly rounding posteriorly, becoming almost transverse to a slightly more elevated junction with an oblique ramus from the suture, the median ridge feeble, irregular, much disintegrated anteriorly, flexed inward posteriorly to a tubercle at the middle of the ramus; suture not elevated and with numerous anteriorly oblique and very feeble branches; humeral angles exposed but obtuse; legs short, rather slender, evidently micro-setulose; tibiæ nearly as in *contortus*. Length 14.7 mm.; width 7.5 mm. Texas.**regularis** Horn

Body smaller, the elytra shorter and relatively more inflated, black, the coating dense, the surface anteriorly densely granulose, but, on exposed spots of the elytra, smooth with small sparse punctures and granules; head nearly as in *contortus* but with the impressions feeble, the antennæ barely at all longer than the width of the head; prothorax as in *contortus*, except that the median line is more narrowly and evenly impressed almost throughout the length and the rectilinearly truncate base is flexed abruptly posteriorly at the sides, causing the hind angles to be posteriorly prominent and more acute; elytra two-fifths longer than wide, the sides more parallel and more arcuate than in *contortus*, more nearly as in *regularis*, widest near the middle, the side margin irregular and uneven but not tuberculose, the subapical formation somewhat as in *regularis* but with the entire surface coarsely reticulate or clathrate, the dividing ridges of the cells acutely elevated, thin and rough, the medial ridge well defined but not more elevated than the transverse ridges, the suture feebly elevated, more narrowly than in *contortus*; humeri exposed, obtusely angulate and feebly reflexed; legs and tibiæ nearly as in the other species, short, rather slender, the parts cylindrical; prosternal process much more deflexed posteriorly than in either of the others, not prominent, the sloping posterior part impressed. Length 11.5 mm.; width 5.8 mm. Texas.

alveolatus n. sp.

In *contortus* the base and apex of the prothorax are equal in width; in *regularis* the base is much wider, and in *alveolatus* correspondingly narrower, than the apex. *Contortus* and *alveolatus* have the same form of prothorax, this being very different in *regularis*; but, in *alveolatus*, the hind body is more nearly as in *regularis*; in the former the prosternal process differs markedly from the porrect flattened form of either *contortus* or *regularis*, though, at the same time, it is not declivous behind as in *Pactostoma* but gradually becomes vertical on its posterior face.

Stenosides Sol.

Not having the type of this genus, the Mexican *graciliformis*, before me at present, I am unable to make any original observation concerning it. The diagnosis of Solier omits some characters that would prove useful in estimating its degree of relationship with *Astrotus*, but some remarks of Lacordaire under his description of *Ologlyptus*, which was apparently drawn mainly from *graciliformis*, would seem to show that it is really more closely related to *Astrotus* than to the species which I have assumed as the type of *Ologlyptus* Lac., *Asida anastomosis* of Say, although the prosternum between the coxæ, according to Lacordaire, more closely resembles that of *anastomosis*. On the other hand, perhaps a too hasty examination of *graciliformis* indicated a form of the process similar to that described above under *Astrotus alveolatus*, which at first sight might easily be pronounced identical with that characterizing *anastomosis* and allied forms; but a closer examination shows that it is really different in having its posterior wall truly vertical toward the lower margin and not posteriorly sloping, being simply a modification of the porrect prominent form typical of *Astrotus*. It is sufficiently evident, at any rate, that Lacordaire united two genera in his conception of *Ologlyptus* and that *Stenosides* should be considered a valid generic group.

I am inclined to place the following species in the genus *Stenosides*:

Blackish, covered with yellowish scales, rather elongate, somewhat flattened above; head covered with yellowish scales, which completely conceal the sculpture; antennæ much heavier than in *Ologlyptus anastomosis*; prothorax transverse, broadest at about the middle, the surface convex, bifoveate, with a fine distinct median

carina which is bifurcate at base, the lateral margin thickened, explanate, rather widely reflexed; apex deeply emarginate, the base slightly bisinuate, the sides very strongly rounded, more suddenly so posteriorly, with a strong constriction in front of the hind angles, which are distinctly acute and rather prominent, the apical acute, feebly rounded; elytra about as wide as the broadest part of the prothorax, almost parallel to about a third from the tip, thence suddenly sinuately narrowed, the apices conjointly rounded; suture elevated posteriorly; costæ three in number, the first nearly straight, parallel to the suture, reaching the base but abbreviated at apex, the second parallel to the first, slightly shorter at each end, the third forming an overhanging elytral margin to just beyond the tip of the second, where it curves in and becomes discal though fading out before attaining the elytral apex, the costæ not confluent at any point; body beneath with large scale-bearing punctures, distant on the abdomen but closer on the thoracic segments; legs densely scaly and relatively stouter than in *Ologlyptus anastomosis*. Length 9.0 mm. Texas (Cameron Co.).....**texanus** Wick.

This description is drawn directly from that of Prof. Wickham (Can. Ent., 1903, p. 72). The apex of the prosternum is said to be deflexed, in the author's opinion excluding it from *Astrotus*. It is probable that the *Astrotus limosus* of Champion, is also a species of *Stenosides*.

Pactostoma Lec.

The body in this genus, which was published in 1858 and therefore antedates *Ologlyptus* (1859), is of small size, elongate, rather convex form, with the anterior parts smaller or the elytra relatively more inflated than usual; the hind body is however never notably stout. The integuments and antennæ are finely chagrined in texture, dull and punctured, each puncture bearing a stout recurved and very distinct pale hair. The mentum closely fills the buccal opening, extending almost but not quite to the closed mandibles and rests upon a broad and very short gular pedestal. Antennæ rather slender, with more elongate joints than in *Astrotus* and with the usual tribal structure of the apical parts, the epistoma broadly sinuato-truncate, the labrum feebly sinuate medially, only moderately transverse and the eyes coarsely faceted. The elytra are more shining and are evenly oblong-oval as a rule, sometimes slightly broader behind the middle, with the base equal in width to the thoracic base or but little wider, sometimes with a fine constriction just behind the humeral angles, which are distinct and narrowly though feebly reflexed. The acute margin is gradually

flexed inwardly toward apex, meeting the first costa near the apex and thence extending as a single costa nearly to the conjointly subacute tip; between the first costa and the side margin there is a very irregular second costa having numerous branches and uniting with the first costa behind the middle. The costæ are more densely punctured and pubescent than the depressions but the pubescence is of the same character. The legs and tarsi are short and slender, the anterior tibiæ cylindrical, generally with a very small acute external angle at tip. The prosternal process is deflexed, sloping gradually to the level of the mesosternum and the trochantin is small but visible. The integuments are usually clean, only occasionally being covered with a dense argillaceous coating, this being by no means characteristic as it is in *Astrotus*.

The various species and subspecies adhere very consistently to the above formula and are closely allied among themselves; those in my cabinet may be recognized possibly by the following characters:

- Sides of the prothorax evidently sinuate before the basal angles, which are right and frequently slightly prominent.....2
- Sides of the prothorax oblique posteriorly, not or scarcely sinuate before the basal angles.....5
- 2—First and second elytral ridges uniting at about apical third.....3
- First and second ridges uniting well in advance of apical third or at about apical two-fifths.....4
- 3—Body moderately stout, blackish-brown in color, the yellowish hairs conspicuous, dense on the ridges; head not evidently impressed, the hairs very coarse and conspicuous; antennæ nearly as long as the prothorax, joints three to six gradually and slightly shorter, the tenth abruptly wider, the eleventh small, transversely rounded; prothorax slightly wider than long, the apex moderately sinuate, distinctly narrower than the base, widest slightly behind the middle, the sides broadly rounded, converging and feebly arcuate to the acute but not prominent apical angles, converging, becoming sinuate and then parallel to the right and not rounded but not at all prominent basal angles, the base transverse and rectilinear throughout; surface broadly, evenly convex, becoming explanate along the sides, strongly, not densely punctate, with a smooth median line and a small punctureless spot at each side of the middle; scutellum broadly triangular; elytra widest at the middle, where they are much wider than the prothorax, at base as wide as the base of the latter, three-fifths longer than wide, the first costa frequently divided partially, the space between the second costa and the sides with a short posterior intermediate ridge as usual and with numerous other inequalities; depressions strongly but not coarsely or conspicuously and rather

sparsely punctate, the side margins minutely granulose; abdomen convex, paler in color, strongly but sparsely punctate. Length 12.0 mm.; width 5.7 mm. Kansas. [*Asida anastomosis* Say].

anastomosis Say

A—Nearly similar but shorter and with the hind body relatively a little more inflated, the first costa feebler and frequently in great part almost obsolete, the elongate cell, formed between the second costa and the short costa near the posterior part of the surface between the second costa and side margin, very much less oblique in direction than in *anastomosis*, the sides more rapidly rounding inwardly behind and the humeral angles more exposed and slightly prominent; prothorax nearly similar but widest at the middle and with the apical as well as the basal angles more acute and slightly more prominent; antennæ slightly more slender. Length 11.4–11.6 mm.; width 5.75–5.8 mm. Texas (El Paso),—Dunn.

salebrosa n. subsp.

Body smaller, relatively shorter, rather convex, black, the pale hairs longer but less numerous; head sparsely punctured, the long hairs becoming short anteriorly; antennæ rather stouter than in *anastomosis*; palpi moderate, the last joint recti-triangular and but little longer than wide as usual; prothorax a third wider than long, formed nearly as in *salebrosa* but with the side margins more thickened, the punctures sparser and more irregular and with the impunctate areas larger and irregular, the median line broader toward base; elytra nearly as in *salebrosa* but barely one-half longer than wide and with the humeri not prominent, the base equal in width to the thoracic base, the ridges similar but more elevated, the shining depressions more coarsely punctured, especially toward the suture, and with the sparse granules more evident; side margins more evidently thickened and granulose. Length 10.0 mm.; width 4.7 mm. Mexico (Chihuahua—near the city),—H. F. Wickham.

***breviscula** n. sp.

4—Form rather slender, stouter in the female, very dark brown or piceous in color, the hairs unusually short and coarse, strongly recurved and subdecumbent; head feebly impressed, finely, sparsely punctate, more strongly and closely on the occiput, the antennæ moderate; prothorax decidedly shorter than in *anastomosis*, two-fifths wider than long, widest at the middle, the apical sinus shallower and the transverse base becoming posteriorly oblique near the angles, which are right to slightly acute; sides subevenly and rather broadly rounded, less sinuate basally than in *anastomosis*, the margins more thickened; surface strongly, rather sparsely and unevenly punctate, the median line not so well defined, moderately subreflexed laterally; elytra oval, widest slightly behind the middle, otherwise nearly as in *anastomosis* but more coarsely punctate and with the ridges more pronounced and not so densely punctate or pubescent. Length (♂, ♀) 11.4–13.0 mm.; width 5.3–5.9 mm. Arizona (Globe).....**exoleta** n. sp.

Form still more slender than either of the preceding and with the apical

lobe more acutely ogival, dark brown, the integuments free from earthy matter like the preceding; pubescence more abundant and even coarser; head nearly similar but with the eyes less transverse from a dorsal viewpoint; prothorax similar and with smooth dorsal patches, except that the widest point is obviously behind the middle, the sides gradually feebly deplanate and not at all thickened, the hind angles much more acute and prominent, obliquely dentiform and the subglabrous narrow median line somewhat cariniform; elytra oval, two-thirds longer than wide, two-fifths wider than the prothorax, unusually acute at apex, the ridges as in the two preceding forms but with feeble indentations representing the punctures, the minute granules bearing the hairs similar; abdomen sparsely punctate, the punctures much larger than in either of the preceding. Length (♀) 11.5 mm.; width 5.0 mm. Arizona (Huachuca Mts.),—Chas. Schaeffer.....**monticola** n. sp.

Form more ventricose than in the three preceding, the prothorax smaller; integuments deep black, the elytra very shining but having the body densely coated throughout with earthy matter in a manner differing from any of the preceding species, which are usually wholly free from such coating; pale hairs small and decidedly sparse, not much closer on the ridges; head sparsely, rather finely punctate, the antennæ more slender; prothorax scarcely a fourth wider than long, widest slightly behind the middle, the apex deeply and parabolically sinuate and distinctly narrower than the base, the latter feebly arcuato-truncate, slightly oblique at each side, the angles right, not rounded; sides arcuate, feebly sinuate basally; surface sparsely, unevenly punctate, broadly and feebly concave laterally, the edge thickened; elytra barely one-half longer than wide, parallel, oval, widest at the middle, the apex rather prolonged and acute; ridges of the same general form as in the other species but with the first and second confluent only slightly behind the middle, the concavities sparsely but strongly punctured; legs very slender, short as usual. Length (♀) 10.8 mm.; width 5.3 mm. New Mexico.

luteotecta n. sp.

5—Body slender, gradually broadening to well behind the middle of the elytra (♂), or with the latter broader, more evenly oblong-oval and widest at the middle (♀), the integuments blackish-brown, not coated with earthy matter as a rule, the pale hairs unusually long and relatively slender, though notably sparse, a little closer on the narrow summits of the ridges; head as usual; prothorax but little wider than long, rather more evidently so in the female, widest at the middle, where the sides are more or less subprominently rounded, thence converging and nearly straight to both apex and base, the former deeply, parabolically sinuate, the base broadly arcuato-truncate, with a feeble sinus at each side, the angles slightly obtuse but not at all rounded; surface dull as usual, strongly, sparsely punctate, with a broad and very well defined impunctate median line, and, at each side, about two irregular punctureless spaces, moderately concave laterally, the edge scarcely thickened, having

just before the scutellum a short transverse fold; elytra with sculpture nearly as in *anastomosis*, except that the ridges are much higher and with finer summits, the more concave interspaces strongly, irregularly punctured, shining, the humeri slightly everted and prominent but not exposed basally; abdomen rather strongly and closely but not very coarsely punctate (♂), or finely, sparsely so (♀). Length 10.0–12.2 mm.; width 4.1–5.8 mm. Arizona (Winslow),—H. F. Wickham.....*sigillata* n. sp.

Body small and rather slender (♂), strongly convex, deep black, densely coated with earthy matter, the pale hairs nearly as in the preceding but not quite so long; head feebly impressed and punctulate, dull, the antennæ moderately slender, the third joint notably longer than the fourth; prothorax but little wider than long, widest rather behind the middle, where the sides are somewhat prominently, almost subangularly rounded, thence converging to base and apex, becoming very feebly sinuate near each, the apex only moderately sinuate, with the angles not much advanced and somewhat blunt; base feebly arcuato-truncate, becoming slightly but broadly sinuate at each side; surface nearly as in *sigillata*, the fold before the scutellum finer; elytra sculptured as in *sigillata*, the first and second ridges confluent near apical third but differing in outline, being more regularly oval, widest nearer the middle and more acute posteriorly; punctures between the suture and first ridge very coarse and deep; abdomen rather strongly but only moderately closely punctate; external apical spine of the anterior tibiæ exceptionally small and slender. Length 9.7 mm.; width 4.25 mm. New Mexico.

obtecta n. sp.

The male and female differ considerably in this genus, the former being notably more slender and with the greatest width of the body more posterior than in the latter, at least in several species. The punctuation of the abdomen is usually much stronger and closer medially in the male than in the female, where the punctures are not only finer but sparser and more evenly distributed; this is particularly evident in *exoleta*, where the abdominal punctures are conspicuously strong and close-set medially in the male. The sculpture of the upper surface is apt to be more pronounced in the male, and there are slight differences, as usual, in the relative sizes and proportions of the anterior parts and the hind body. The singular short transverse fold of the pronotal surface, situated along the base just before the scutellum, is a generic character but is poorly defined except in *sigillata* and *oblecta*.

Pycnonotida n. gen.

In this genus the body is stout and very convex, without closely adherent earthy matter, the pronotum gibbose, with a discally

impressed basal lobe, strongly, densely, muricately sculptured as a rule and subequal in width to the elytra, sometimes broader and occasionally narrower, especially in the female, the elytra sinuate at base, very roughly and unevenly sculptured and with minute granuliferous punctures scattered irregularly over the surface, becoming a little more pronounced near the side margins, which are acute, gradually rounding inward behind and extending to the apical angles; the inflexed sides, or epipleura, are very narrow for the present tribe. The head is moderate, the epistoma somewhat subangularly sinuate and the labrum feebly sinuate medially. The mentum is transverse, contiguous to the sides of the buccal cavity, resting upon a very short and broad gular pedestal, the open cavities at the sides of which are very small; the apex is distant from the closed mandibles, as in all normal Asidids, and has the usual small medial sinus, the ligula small, angularly emarginate, nearly flat and retractile, the palpi moderate. The antennæ are rather long, stout, compressed and subparallel, clothed throughout with very stiff black setæ, only very feebly enlarged apically, the ninth joint longer than the transverse tenth joint and often fully as wide, the tenth deeply, subobliquely sinuate at apex, with the ends of the exposed apex spongiose, the eleventh very small, short, obliquely truncate in contrary sense to the obliquity of the tenth, and, as usual, spongiose at tip; the third joint is notably longer than the basal joint, conforming to the general rule in the tribe. The prosternum is porrect between the coxæ and the convex abdomen is always coarsely punctate in typical forms of the genus; the trochantin is large and distinct. The legs are rather long and well developed, the tarsi stout, the intermediate three joints of the anterior very short and transverse; they are briefly setose throughout; anterior tibiæ moderately everted and acute at apex externally. The tarsal claws are pale testaceous, in marked contrast to the black and dullish integuments of the body and legs.

In *Microschatia*, as represented by the typical *punctata* of Solier, the tenth antennal joint is notably wider than the ninth, the body is flatter and has a very different type of dorsal sculpture, as seen particularly in the rows of coarse punctures on the elytra. In *Pycnonotida* the eyes are very much shorter, very thin or transverse and are notably less coarsely faceted than in *Pactostoma*. There is

in fact no close affinity of any kind between the *Microschatia* group, containing *Pycnonotida*, *Microschatia* and one or two other genera as yet undescribed, and *Pactostoma*, but this scarcely seems to warrant the course suggested by Dr. Horn in making *Astrotus* and *Pactostoma* a group apart, for *Pactostoma* is a form in some respects transitional between *Astrotus* and the more normal Asidids, in having the mentum slightly separated from the closed mandibles and resting upon a rudimentary, though evident, gular pedestal, of which there is no trace in *Astrotus*.

The species and subspecies in the neighborhood of *inæqualis* are numerous but difficult to separate on expressible characters, though clearly distinct under actual comparison; they have been overlooked thus far and disregarded as accidental variations of *inæqualis*; those known to me have the following differential characters:

- Upper surface wholly or in great part rugose.....2
- Upper surface smooth or nearly so, the pronotum not muricate.....8
- 2—Pronotum densely and strongly muricate.....3
- Pronotum variolately punctate.....7
- 3—Sides of the prothorax very rapidly converging anteriorly, the apex seldom more than one-half the maximum width.....4
- Sides of the prothorax but little more converging anteriorly than posteriorly, the apex two-thirds the maximum width.....6
- 4—Abdomen less coarsely and more closely punctate, with the interspaces not more or less shining but densely opaque and minutely sculptured; prothorax distinctly wider than the elytra in the male. Body moderate in size, the minute hairs blackish; head coarsely punctate, very densely so toward base; antennæ as long as the prothorax, the latter one-half wider than long, the sides strongly rounded, the apex barely one-half the maximum width, evenly convex, feebly concavo-explanate laterally, finely, strongly and very densely muricato-punctate throughout, the basal impression deep, with an oval flat space at its bottom on the hind margin punctureless; hind angles very obtuse but scarcely at all blunt; apex sinuate, the angles slightly blunt; elytra scarcely more than two-fifths longer than wide and one-half longer than the prothorax, oval, the sculpture of each resolvable into two coarse discal ridges, having their slopes deeply, subtransversely gullied and the line of their crests finely sinuous; fine granules strong except near the suture; legs closely, muricately punctate; abdomen (♂) not impressed basally. Length (♂) 12.5–13.0 mm.; width of prothorax 6.7 mm., of elytra 6.2 mm. Southern California (locality not recorded).....*laxicollis* n. sp.
- Abdomen coarsely and rather sparsely punctate, with the interspaces rather shining, the prothorax not obviously wider than the elytra in either sex.....5

- 5—Abdomen not impressed basally in the male. Body larger and notably stouter, very convex, opaque, the pronotum with black hairs; head very coarsely punctate, closely toward base; prothorax in form nearly as in *laxicollis* but with the aciculate murication finer and less dense, the sides more explanate; elytra (♀) at least a fifth wider than the prothorax and almost twice as long, evenly oval, widest at the middle as usual, the rugose sculpture more unevenly disintegrated, resolvable into three or four relatively finer and closer uneven ridges, the granules smaller. Length (♀) 14.0 mm.; width 7.7 mm. Southern California (vicinity of San Diego). [*Microschattia inæqualis* Lec.]

inæqualis Lec.

- A—Nearly similar to the preceding, except that in the female the prothorax is nearly as wide as the elytra and in the male only just visibly narrower, the prothorax not quite so strongly narrowed anteriorly, the apex being somewhat more than one-half the maximum width, with a peculiar oblique impression at each side near the apical margin more evident, and the hairs usually not black but fulvous, the small asperities slightly larger and denser and having shining summits; elytra similar, except that the sculpture is coarser, being resolvable into two very large irregular ridges on each, the granules larger. Length (♂, ♀) 12.5–14.5 mm.; width 6.5–7.6 mm. Southern California (vicinity of San Diego). *diversa* n. subsp.

- Abdomen with a strong and broadly concave medial impression toward base in the male. Body moderately stout, black, opaque, the elytra slightly shining on the elevated parts; head very coarsely, loosely but subevenly punctate, not more densely so basally; antennæ as usual; prothorax rather more than one-half wider than long, nearly as in *inæqualis* but much more coarsely muricate, more impressed on the median line centrally, more strongly explanate and concave laterally and with a more broadly concave basal impression, the apex slightly more than half the maximum width; elytra equal in width to the prothorax and two-thirds longer, oval, the two ridges lower than usual, very much broken, the sutural line smoother and somewhat concave, the apical slope also smoother than in the preceding species; granules very conspicuous laterally; abdomen coarsely, moderately closely punctate throughout. Length (♂) 13.0 mm.; width 6.4 mm. Southern California,—Mr. Sanford.

araneoides n. sp.

- 6—Body narrower, more oblong-oval, or less constricted at the waist, opaque; head coarsely, loosely punctate, more coarsely but scarcely more closely basally; prothorax shorter, more parallel and with less inflated sides than in any other form, of the usual convexity but more narrowly declivo-subexplanate at the sides, the surface not impressed medially, coarsely, densely and sharply muricato-punctate, the basal impression as usual; elytra as wide as the prothorax and about twice as long, nearly as in the preceding but with the granules laterally smaller and sparser; abdomen very strongly, rather closely, muricately punctate, the interspaces rather shining

but closely, minutely punctulate, without trace of basal impression in the male. Length (♂) 12.0 mm.; width 6.0 mm. Southern California (locality not recorded).....*impar* n. sp.

- 7—Body black, slightly shining; prothorax with the sides strongly rounded and subreflexed, densely, variolately punctate, less retuse medially at base than in *inæqualis*; elytra uneven in sculpture, smooth toward the suture and apex. Length 15.7 mm. Southern California (Warner's Ranch). [*Microschatia puncticollis* Lec.].

puncticollis Lec.

- 8—General form as in *inæqualis* but more slender and elongate, piceous-black, shining, with but few punctures or irregularities above; head coarsely, sparsely punctate, subopaque; prothorax about a third wider than long, the sides strongly arcuate; base narrower than at middle, the surface convex, with a basal depression opposite the scutellum, very shining and sparsely punctate, becoming opaque and a little more punctate laterally; elytra smooth, very sparsely punctate, the surface with vague traces of sulci; epipleura well defined; prosternum between the coxæ rather wide, obtuse at tip, coarsely granulate; propleura opaque and sparsely punctate; metepisterna fully one-half longer than wide; abdomen shining, sparsely punctate; legs muricate. Length 15.0 mm. Arizona [*Microschatia polita* Horn].....*polita* Horn

The last species of the table is included with some doubt, as it manifestly differs very much from the *inæqualis* type and belongs to a somewhat different faunal region. However, it evidently fits the present genus better than *Microschatia* and may be safely left here until its generic characters can be observed more fully. The form made known, in very few words by LeConte under the name *Microschatia puncticollis*, would appear to be specifically distinct from *inæqualis* and its immediate allies, in having the pronotum punctured rather than muricate; this feature was evidently overlooked in reducing it to synonymy.

Microschatia Sol.

While resembling *Pycnonotida* in many of its more important characters, such as the thick antennæ with obliquely emarginate tenth joint, stout tarsi with the intermediate joints of the anterior very short and subperfoliate, median impression at the base of the pronotum, reproduced however in *Euschides* and some other genera, and narrow inflexed sides of the elytra—although in the typical species the epipleura are not defined—it would seem that *punctata* and *championi* must form a separate genus, because of the different form of the body, radically different sculpture in having the elytra

coarsely and serially punctate, more deeply sinuate labrum and the mentum extending laterally even beyond the sides of the buccal cavity anteriorly. The basal angles of the prothorax are distinct but do not overlap the humeri in the typical forms of *Microschattia*. The species are all unknown to me in nature, and the following descriptions are taken from the outline sketches made known by Dr. G. H. Horn (Trans. Am. Ent. Soc., 1893, p. 140):

Form oblong-elongate, the sides of the prothorax regularly arcuate, without sinuation, the hind angles distinct but not prominent, the surface coarsely, sparsely and irregularly punctate and with a depression at the middle of the base; elytra with coarse punctures arranged in irregular rows, the intervals elevated, forming a reticulation, sometimes exhibiting a tendency to become subcostate, in which cases the general sculpture approaches that of *Glyptasida sordida*; prosternum coarsely, cribrately punctured at the sides, broad between the coxæ, the apex broadly truncate; met-episterna scarcely longer than wide; epipleura not distinctly limited. Length 15.0 mm. Mexico (State of Hidalgo).....***punctata** Sol.

Form oblong, of the same general outline as *Glyptasida sordida* but less convex, black, shining; prothorax broader than long, narrowest at apex, the sides arcuate, with a slight sinuation near the hind angles, the latter acute, not prolonged over the humeri; base narrower than the middle; surface convex, quite smooth, with a moderately strong impression at the middle of the base, slightly explanate and coarsely, roughly sculptured laterally, sparsely, indistinctly punctate anteriorly; elytra gradually wider two-thirds to apex, then rapidly narrowed, the humeri acute; surface with coarse, not closely placed punctures arranged, from the suture, in eight quite regular series but at the sides evidently confused, at apex smooth; abdomen coarsely, deeply and sparsely punctate near the base; met-episterna longer than wide, smooth; epipleura well marked in their entire length. Length 15.5-20.0 mm. Lower California. [*M. punctata* Horn nec Sol.].....**championi** Horn

Body oval, narrower in front, opaque; head vaguely and not closely punctate, each puncture with an elongate pale scale; prothorax at base one-half wider than long, narrower at apex, the sides feebly arcuate, the hind angles prolonged slightly over the humeri; surface convex, without median basal impression, moderately closely punctate, each puncture with a scale; elytra widest behind the middle, each with three feebly defined short discal costæ united by anastomosing lines, the intervals not distinctly punctate; propleura opaque, sparsely granulate; prosternum coarsely, sparsely punctate and with semi-erect hairs, the apex oval or subtruncate; epipleura well defined; abdomen coarsely, not densely punctate. Length 12.0-17.0 mm. New Mexico (Grant Co.) and Arizona.....**morata** Horn

Body oblong, more parallel, somewhat as in *Asidopsis opaca*; prothorax as broad at base as at the middle, the surface smooth, the hind angles acute, overlapping the humeral angles of the elytra, which are distinct; elytra parallel anteriorly and rather distinctly wider than the prothorax, the sides rounding inwardly behind, the surface closely and somewhat irregularly sulcate; abdomen finely, evenly and not densely punctate; prosternum moderately wide between the coxæ, obtuse or truncate at tip, the propleura punctate; epipleura well defined; met-episterna a little longer than wide. Length 15.0 mm. Texas (Llano Estacado)..... *sulcipennis* Lec.

The two species *morata* and *sulcipennis*, the latter still represented by the unique in the LeConte collection, are only provisionally attached, as they will certainly form one distinct genus and probably two, by reason, among others, of the radically different form of the basal thoracic angles. It is probable that the Mexican *robusta* Horn, is congeneric with *morata*.

Glyptasida n. gen.

This genus is obviously distinct from its neighbors in several structural features, as well as in facies, the latter being peculiar and unremindful of any other type of the tribe. It is allied to both *Pycnonotida* and *Pelecyphorus*, agreeing with them in the small and nearly flat retractile ligula, and, in addition, is similar to the latter in the large scalene last palpal joint of the male and in its broad inflexed sides of the elytra; it differs from *Pycnonotida*, *Microschatia* and others of that small group of genera in both of these characters. The body is oval or oblong-oval, of rather large size, the labrum moderately transverse and evidently sinuate medially at apex, the mentum rather large and unusually parallel-ogramic, with the sides nearly parallel, and the apex has a small deep median emargination; the pedestal is short but evident and the sides of the buccal cavity are unusually abbreviated. The antennæ are moderately thick, bristling with very stout erect short setæ and the tenth joint is rather abruptly wider than long, deeply sinuate at the middle of the apex, with the spongiose spots extending laterally and sometimes becoming rather approximate on the sides, the eleventh small, rapidly obconic and transversely truncate and spongiose at apex. The maxillary palpi often have the large scalene terminal joint of the male peculiarly modified by apical emargination or excavation, but whether this is in any way accidental or is normal

it is difficult to say definitely with the relatively small material at hand, as, in at least one case, the two terminal joints of the same individual are different, and yet it is difficult to understand how the profound concavity of the apex, sometimes reducing the lateral outline of the joint to a slender arc, could have been brought about. The prothorax is transverse, always bisinuate at base, with more or less posteriorly prominent and acute basal angles, this thoracic conformation being the chief character distinguishing it from *Pelecyphorus*. The elytra are always margined at the sides, the acute margin terminating at some distance from the apex, and each has two acutely formed subeven discal ridges, frequently united posteriorly about opposite the end of the marginal ridge and with the concave intervals transversely and unevenly folded or crumpled; the humeral angles are obtuse and more or less rounded, but the sides of the basal margin are laterally prominent and acute, because of a constriction immediately posterior thereto. The prosternum between the coxæ is strongly deflexed posteriorly, with its surface impressed along the median line. The legs are rather slender, moderately long and comparatively weak, the tarsi somewhat short but not stout, briefly spinulo-setose beneath, the anterior tibiæ moderately everted externally at tip and acutely pointed.

The species are moderately numerous but very local, those represented in my collection being separable as follows:

- Pronotum with very coarse, close and more or less confluent punctures. 2
 Pronotum with much smaller, widely separated though irregularly distributed punctures. 11
 2—Sides of the prothorax not or but feebly serrulate. 3
 Sides of the prothorax strongly and very distinctly serrulate. 10
 3—Prothorax moderate or small in size, as a rule but little more than one-half as wide as the elytra in either sex. 4
 Prothorax large, always much more than half as wide as the elytra. 5
 4—Elytral pubescence extremely minute and inconspicuous; color piceous-black, the head moderately impressed and punctate; prothorax about one-half wider than long, narrowed before the middle, the rounded sides subserrate, deplanate, subreflexed, densely, coarsely and irregularly punctate; elytra oblong-oval, convex, posteriorly subacute, the suture, margin and two costæ on each elevated, with transverse sinuous lines between them, more inflated in the female, where they are twice as wide as the prothorax. Length 18.7–21.2 mm. Arkansas River, near the mountains. [*Pelecyphorus sordidus* Lec.]. **sordida** Lec.
 A—Similar in general to *sordida* but decidedly smaller and more ab-

breviated, black, rather shining, the anterior parts dull; head feebly impressed, the punctures fine and not dense, becoming coarser and close basally; prothorax short, a little less than twice as wide as long in both sexes, the apex moderately sinuate, evidently narrower than the base, with blunt angles, the sides broadly rounded, converging and becoming feebly sinuate toward the basal angles, which are right and not rounded, the base broadly arcuate, becoming sinuate laterally; surface coarsely, very deeply and confluent punctate, convex, becoming explanate though scarcely at all reflexed and transversely rugose laterally; elytra about three times as long as the prothorax, and, in the female, not quite twice as wide, but little longer than wide in the latter sex, having the usual costæ well developed, the rugose intervals with the fine micro-setiferous granules numerous and conspicuous; abdomen not very coarsely but strongly, closely and subasperately punctate (♂) or more finely and sparsely though strongly so (♀), the small hairs blackish. Length 16.5–18.0 mm.; width 9.0–11.0 mm.

Colorado,—F. G. Schaupp.....**porcatula** n. subsp.

Elytral pubescence as in the preceding, color almost perfectly black, the hind body much inflated, dull, the elytra feebly shining; head with the punctures less evidently closer though slightly coarser basally than in *porcatula*; prothorax smaller than in any other species, not quite twice as wide as long, the evenly sinuate apex much more notably narrower than the base, with the angles right and scarcely blunt, the sides broadly rounded rather behind the middle, strongly converging and almost straight thence to the apex, feebly so but distinctly sinuate to the basal angles, which are more prominent, subacute but blunt, the base truncate medially, obliquely sinuate thence to the angles; surface nearly as in *porcatula* but with a feeble impression along the basal truncature, and, at each sinus, a rather large area devoid of punctures; elytra (♀) nearly as in *porcatula* but more evidently longer than wide and rather more than twice as wide as the prothorax, similarly evenly oval and widest at the middle but differing in the relatively stronger outer and feeble inner of the discal ridges, the sutural region more depressed, the intervals much less sharply undulato-rugose, with the fine granules almost similarly close-set and distinct; abdomen (♀) more strongly and closely punctate than in *porcatula*, with similar small fuscous hairs. Length 18.0 mm.; width 10.7 mm. Arizona (locality not stated), —H. F. Wickham.....**parvicollis** n. sp.

Elytral pubescence half as long as the length of the eye, very coarse, pale yellowish and conspicuous; color grayish-black; general form nearly as in *sordida* but more depressed; head feebly, indefinitely impressed, strongly but not densely punctate, the small pale hairs distinct; prothorax two-thirds to three-fourths wider than long, parallel and broadly arcuate at the sides, moderately sinuate at apex, the angles blunt; basal angles unusually feebly produced, acute; surface moderately convex, coarsely, not very densely and irregularly punctate, moderately broadly concavo-explanate at

the sides, each puncture with a small but very distinct pale hair; elytra two-fifths to one-half longer than wide, fully one-half wider than the prothorax, oval, rapidly obtuse behind, the apical lobe very short and obtuse; surface with the costæ narrow and sharply though moderately elevated, the side margins also elevated, the intervals nearly flat, undulato-rugose, densely opaque, the fine seta-bearing punctures strongly granulate; portion between the second costæ, across the suture, flat to very moderately convex; abdomen sparsely, asperulately punctate, the small pale hairs distinct. Length (σ) 15.5–17.0 mm.; width 8.1–8.9 mm. New Mexico (Escondido),—Wickham. **subpubescens** n. sp.

5—Discal costæ of the elytra fine and abruptly elevated. 6
Discal costæ broader, more obtuse and less elevated; prothorax very large. 9

6—Intervals between the elytral costæ flat or nearly so, though rugose as usual, the elytra much narrowed basally, more oval. 7

Intervals concave, with the rugulosity still more pronounced; prothorax larger, the elytra less narrowed basally, the costæ more conspicuously elevated. 8

7—Body stout, strongly convex, black to piceous in color, rather shining; head strongly and closely punctate throughout, each puncture with a very short dark fulvous hair; prothorax short, nearly twice as wide as long, two-thirds to three-fourths as wide as the elytra, unusually convex, with coarse confluent punctures leaving large shining and very irregular punctureless patches, especially near the sides posteriorly and along the basal margin, concave and evidently reflexed with thin and scarcely at all serrulate edge laterally, the punctures with their anterior margins acutely crenulate, each bearing a short subfulvous hair; sides rounded; basal angles acute, not everted; elytra from a third (σ), to a fourth (φ), longer than wide, widest somewhat behind the middle, the costæ rather fine and not strongly elevated, uniting on the posterior slope as usual, the flat broad intervals confusedly and coarsely, subtransversely rugose and with the minute granuliferous punctures close-set and conspicuous, each bearing an extremely minute erect hair; abdomen rather shining, sparsely, moderately punctate, more closely medially, the hairs very inconspicuous, dark fulvous. Length 19.0–20.0 mm.; width 10.0–11.2 mm. Kansas,—F. H. Snow. . . . **turgescens** n. sp.

A—Form and sculpture nearly similar but much more inflated, black or nearly so, the prothorax (φ) less transverse, three-fourths wider than long, fully two-thirds as wide as the elytra, similarly sculptured but with the side margins much more thickened and abruptly narrowly though feebly reflexed from a distinct line at a slight distance inside the edge, the converging sides basally feebly and very broadly sinuate, the basal angles much prolonged posteriorly and acute; elytra more inflated, widest at the middle, a third longer than wide, the slender ridges higher, the interspaces less flat, rugose, with the fine granuliferous punctures much sparser though distinct, each with a longer and fulvous though very small

hair; last ventral unmodified. Length 20.7 mm.; width 12.0 mm. Kansas (Wallace).—W. Knaus.....*obesa* n. subsp.

- B—Form more parallel, convex, nearly black, the hind body shining, the remainder alutaceous; prothorax (♂) four-fifths wider than long, in outline nearly as in *obesa* but with the hind angles less produced and not so acute, the surface nearly similarly sculptured but with an almost entire impunctate median line, in addition to the uneven punctureless areas, toward the sides broadly concave, the sides strongly reflexed, rather thin and scarcely at all serrulate; base feebly sinuate at the scutellum, broadly sinuate laterally; elytra nearly as in *turgescens* but more shining and with the small granules very much sparser and less conspicuous; abdomen rather finely but strongly, sparsely and asperulately punctate throughout, the last segment of the male as usual unmodified; terminal joint of the right palpus (♂) very deeply and obliquely excavated, reducing the outline on the inner side to nearly a slender arc, the left palpus missing in the type. Length 17.0 mm.; width 9.3 mm. Kansas (without further indication of locality).....*furtiva* n. subsp.

Body (♀) much narrower than even the male of *turgescens*, and very elongate, nearly black, rather shining throughout, the head opaque, broadly impressed, with a rounded impression on the vertex in addition, strongly, rather closely punctate throughout, the hairs extremely short and inconspicuous; prothorax large, three-fourths wider than long, fully three-fourths as wide as the elytra, coarsely, very irregularly and confluent punctate, with a few small punctureless areas, of which two along the base have a series of very fine punctures along the edge, convex, becoming concave laterally, the edge thin, narrowly but rather strongly, not suddenly reflexed, the sides broadly rounded, becoming feebly sinuate toward the basal angles, which are somewhat obliquely prominent and notably acute; base broadly truncate medially, sinuate laterally; elytra not very much less than twice as long as wide, oval, widest at the middle, sculptured nearly as in *turgescens* but with the costæ higher, the intervals somewhat more rugose and the minute granules very much sparser as in *furtiva*; abdomen (♀) nearly as in that form, except the last segment, which is remarkably modified, the apical half being depressed below the level of the basal half—viewed ventrally,—the vertical wall bounding it anteriorly being transversely excavated on its upper edge at each side and its surface medially having two deep subparallel grooves, extending from the anterior wall to the apex; last joint of the maxillary palpi moderate and recti-triangular. Length 21.5 mm., width 10.0 mm. Kansas (Wallace).

procrustes n. sp.

Body (♂) very slender and elongate-oval, convex, black, the anterior parts and elytral depressions opaque, the elytral elevations shining; head moderately punctate, rather finely and sparsely so anteriorly, the hairs longer than usual, distinct, blackish; prothorax two-thirds as wide as the elytra, three-fifths wider than long, widest behind the mid-

dle, where the feebly serrulate sides are rounded, thence unusually converging and straighter anteriorly, feebly converging and subsinuate basally, the apex much narrower than the base, the basal angles subacute, nearly right, the margin truncate medially; surface convex, gradually explanate laterally, the edge thin and very feebly reflexed, very coarsely, confluent punctate, more transversely rugose laterally, the interspaces with small, sparse and irregular punctures; elytra very elongate, widest at the middle, fully two-thirds longer than wide, the costæ rather abruptly elevated, thin, the intervals slightly concave, dull, rather closely, granularly punctulate, the rugæ unusually thin, transverse and abruptly formed, well separated; abdomen closely, asperately punctate, more loosely toward the sides, the last segment unmodified; hairs fine, blackish; maxillary palpi unequally excavated at tip. Length 18.0 mm.; width 8.5 mm. One male without locality label but probably collected in western Kansas.....**strigipennis** n. sp.

- 8—Form moderately stout, convex, piceous-black, rough, opaque; prothorax more than twice as wide as long, the sides strongly rounded and depressed, coarsely and confluent punctate throughout, broadly bisinuate at base, the posterior angles produced and acute; elytra briefly oval, convex, strongly declivous behind, the suture, two costæ on each confluent before the apex, and the margin, strongly elevated, the intervals very irregular, the epipleura sparsely punctulate; abdomen densely punctate. Length 15.0–20.0 mm. Arizona, —Webb. [*Pelecyphorus costipennis* Lec.].....**costipennis** Lec.

- A—Nearly as in the preceding but oblong-oval, the prothorax very large, less transverse, three-fifths wider than long, very nearly as wide as the elytra, the sides broadly, strongly and subevenly rounded, the basal angles strongly produced posteriorly and acute; surface coarsely, confluent punctate, convex, becoming broadly concave and moderately reflexed laterally; elytra narrowed but little basally, only two-fifths longer than wide, shining, the intervals strongly undulato-rugose and with minute sparse granules throughout, each bearing a short but very distinct pale hair; costæ not confluent posteriorly, the first ending at the crest of the declivity, the second and marginal equal in length and prolonged to within a short distance of the apex, the ends of all the costæ perfectly abrupt and free, without indication of extension; abdomen strongly, asperately punctate, rather sparsely so laterally, each puncture bearing a very distinct subrecumbent pale fulvous hair. Length (♂) 18.0 mm.; width 9.0 mm. Without indication of locality.

fulvisetis n. subsp.

- Form much narrower, convex, piceous-black, shining; head opaque, moderately and subevenly punctate, the dark hairs distinct; prothorax large, three-fifths wider than long, three-fourths as wide as the elytra, widest just behind the middle, where the sides are slightly prominent though broadly rounded, moderately and subequally converging thence to apex and base, feebly sinuate in the latter case, the angles moderately produced posteriorly and acute; surface

nearly as in *fulvisetis* but becoming still more concave and reflexed at the sides, the thin edge not serrulate, the small hairs less distinct; elytra fully one-half longer than wide, only moderately narrowed basally and widest somewhat before the middle; costæ very strong, the first and second only imperfectly confluent midway down the declivity, the intervals smooth but strongly undulato-rugose, the minute granules very sparse and inconspicuous, each with a minute, rather dark hair; abdomen with close asperate punctures and imbricato-rugose sculpture, sparser and less pronounced laterally, the fine hairs blackish and inconspicuous; last joint of the left palpus of the male type intact, large and strongly scalene, the right with a large apical excavation on the upper side near the apex. Length (♂) 17.5 mm.; width 8.3 mm. New Mexico,—Gissler.

turbulenta n. sp.

- 9—Elytral humeri obtusely angulate and distinct, the elytra only moderately narrowed basally. Piceous-black, slightly shining; prothorax twice as wide as long, narrowed anteriorly and posteriorly, the sides strongly rounded, depressed and transversely rugose, the disk sparsely punctate, broadly bisinuate at base, the posterior angles subacute; elytra oval, convex, strongly declivous behind, the suture, two dorsal costæ on each confluent before the apex and the lateral margin obtusely elevated, the intervals unequal, not at all punctate; beneath sparsely punctate; epipleura unequal, impunctate. Length 18.7 mm. Texas (Llano Estacado). [*Pelecyphorus æger* Lec.].....**ægra** Lec.

- A—Piceous-black, shining; prothorax more than twice as wide as long, narrowed anteriorly, the sides rounded, depressed and transversely rugose, the disk rather densely punctate, the base broadly and slightly bisinuate, the hind angles subacute; elytra ovate, convex, strongly declivous behind, the suture, two discal costæ on each confluent before the apex and the lateral margin elevated; intervals very unequal, impunctate; beneath punctate. Length 20.2 mm. Texas (Llano Estacado). [*Pelecyphorus irregularis* Lec. and *inaequalis* Horn nec Lec. (Rev. Ten., p. 283)].

irregularis Lec.

- B—Oblong, rather stout, moderately convex, black, slightly shining, the anterior parts duller and obscurely rufescent; head moderately punctate; prothorax very short and broad, fully four-fifths as wide as the elytra, very nearly twice as wide as long, the sides rather strongly and almost evenly rounded, the base broadly bisinuate, with the angles much produced posteriorly and very acute; surface coarsely, confluent punctate, narrowly concave, moderately reflexed and transversely rugose at the sides; elytra only about a third longer than wide, widest at the middle, very moderately narrowed basally, the sides rounded; surface with the costæ distinct, the discal confluent midway down the posterior declivity and thence feebly continued nearly to the apex, where the feeble ridge meets the marginal ridge; interspaces strongly, very confusedly, subtransversely rugose and without evident granules

but with a few widely scattered minute hairs; abdomen moderately, asperulately punctate. Length 17.5 mm.; width 9.7 mm. A single example of unknown sex labeled "Cal." in the Levette cabinet, but perhaps erroneously..... *pigra* n. subsp.

- C—Oblong-ovoidal, larger and stouter, black throughout, shining, the anterior parts alutaceous; head opaque, with rather scattered moderate punctures, each with a small brown hair; prothorax large, three-fifths wider than long, almost three-fourths as wide as the elytra, nearly parallel and with subevenly, moderately rounded sides, the basal angles only moderately produced posteriorly, less acute than in *pigra*, the surface nearly similar but much more broadly concave and more gradually, moderately reflexed laterally, the anterior angles similarly notably blunt and rounded; elytra two-fifths longer than wide, with rounded sides, widest at the middle, the costæ feebler than in *pigra*, similar posteriorly though more rapidly rounding inwardly at the sides, the intervals less concave, less coarsely, more transversely and less closely rugose, the surface with very minute sparse and inconspicuous granules, each bearing a very small dark fulvous hair; abdomen minutely punctulate and imbricato-rugulose. Length 20.0 mm.; width 10.8 mm. One example labeled like the type of *pigra*..... *plena* n. subsp.

- D—Oblong-oval, moderately convex, piceous-black, shining, the anterior parts alutaceous; head rather finely, loosely, punctate, the minute hairs indistinct; prothorax large, three-fourths as wide as the elytra, two-thirds wider than the median length, the sides subevenly and unusually strongly rounded from the rather acute apical to the produced and acute basal angles; surface only moderately coarsely, rather sparsely but unevenly punctate, becoming densely so laterally, the sides broadly concave, rather strongly, gradually reflexed and transversely rugose; elytra two-fifths longer than wide, widest at the middle, rather acute posteriorly, the sides arcuate, the discal costæ moderately elevated, their crests fine and acute, their posterior ends free, not at all anastomosing, the first extending more than half way down the convex declivity, terminating abruptly opposite the end of the marginal carina, the second ending abruptly near the upper limit of the declivity; intervals with strong rugæ, forming transverse spurs from the ridges, the surface smooth, minutely, remotely and inconspicuously granulate and with small but rather evident palish hairs. Length (♂) 17.0 mm.; width 9.1 mm. The type without indication of locality but probably taken in Colorado. *imperfecta* n. subsp.

Elytral humeri very obtuse, broadly rounded and subobsolete, the elytra very strongly narrowed basally. Body suboblong, moderately stout, strongly convex, shining, the anterior parts dull black, otherwise subrufescent; head opaque, rather closely but not very coarsely punctate; prothorax very short and broad, four-fifths as wide as the elytra, very nearly twice as wide as long, the apex much narrower than the base, rather deeply, evenly sinuate as usual, with the angles

very bluntly rounded, the base broadly bisinuate, with the angles right, not at all rounded; sides subevenly and strongly rounded throughout the length; surface moderately coarsely, unusually deeply, densely and sublongitudinally confluent-punctate, with a few irregular punctureless areas, broadly concave, gradually and moderately reflexed and closely, coarsely, transversely rugose laterally; elytra ovoidal, fully two-fifths longer than wide, widest at the middle, with the sides very strongly arcuate; at the humeri much narrower than the thoracic base; discal costæ broad at base, the second finely acute along the crest and strongly elevated, the first very low and finely sinuous, uniting with the marginal ridge unusually near the apex, the second ending abruptly near the summit of the declivity; surface throughout very coarsely, strongly and confusedly rugose, impunctate and without evident hairs; under surface rufescent, alutaceous, the abdomen rather finely but strongly, not densely punctate. Length (σ^7) 16.7 mm.; width 8.7 mm. Texas.....*heres* n. sp.

- 10—Form elongate-suboval, strongly convex, black, somewhat shining throughout; head dull, rather finely, sparsely punctate, coarsely and more closely so at base, the hairs dark and indistinct; prothorax relatively very small, three-fifths wider than long, less than three-fifths as wide as the elytra, coarsely, very deeply and unevenly but rather loosely punctate and strongly convex medially, the punctures densely confluent laterally, the sides subevenly rounded throughout, but little converging basally, more so apically and rather narrowly, deeply concave, reflexed and transversely coarsely rugose, the edge rather thick and strongly serrulate; hind angles small, not much produced, not blunt, the base sinuato-truncate medially, broadly sinuate laterally; elytra relatively large, much elongated, nearly three-fifths longer than wide and four times as long as the prothorax, widest at the middle, the sides broadly arcuate, the humeri obtusely rounded, not very evident, the discal costæ moderately elevated, equal, confluent at the basal margin and also more than midway down the posterior convex declivity, the surface moderately and not very closely, subtransversely rugose and with the granules distinct and rather close-set, the hairs not distinct; abdomen shining, the moderate asperulate punctures narrowly dense along the median line, sparse laterally, the last segment normal. Length (♀) 19.0 mm.; width 10.0 mm. Wyoming (Wind River).

crenicollis n. sp.

- 11—Body oblong, moderately stout, deep black and rather shining throughout; head broadly but evidently impressed, the punctures rather sparse but evident throughout, the minute hairs not very distinct; tenth antennal joint not very abruptly wider than the ninth; prothorax large, five-sixths or more as wide as the elytra, three-fifths wider than long, the deeply sinuate apex much narrower than the base, the angles blunt; sides evenly and rather strongly rounded, becoming straight or barely subsinuate near the basal angles, which are moderately produced and acute; surface convex, sparsely, unevenly and rather finely punctate, becoming broadly

concavo-explanate and more coarsely, closely punctate laterally, the edge narrowly rugose transversely, slightly thick and not at all serrulate; base truncate medially, broadly sinuate laterally; elytra fully one-half longer than wide, oval, with arcuate sides, widest slightly behind the middle, the humeri very obtuse and blunt but evident; first discal costa broad but feeble, scarcely being more than a tumid ridge, the second very broad but more or less distinct, usually with fine distinct crest, the dorsal space across the suture between the second ridges convex to almost flat, outside the second ridge steeply declivous, the acute margin ending at some distance from the apex; surface with large but feeble rugæ, almost even laterally, without evident granules or hairs; abdomen sparsely, not very coarsely, asperulately punctate, less sparsely so medially. Length 17.0-18.0 mm.; width 8.7-9.6 mm. Texas (Alpine),—H. F. Wickham.

sycophanta n. sp.

Under the species identified above as *sordida*, because of its small prothorax, I have included a number of subsidiary forms, represented for the most part by single specimens, and have simply quoted from the original description of the author for its characterization, being compelled for the time being to merely indicate its probably correct place in the series. The forms here described as species are all valid with, I think, scarcely any doubt, and it is probable that a number placed as subspecies will also prove rather to be species than of subordinate weight, this being especially the case with *obesa*, *furtiva*, *fulvisetis* and *imperfecta*. The conspicuous modification of the last ventral segment in the female of *procrustes* is such an isolated character in the genus, that I have sometimes thought it might be accidental; its bilateral symmetry would however seem to indicate that it is normal to the species, which is obviously distinct from its fellows in many other characters as well. It is impossible to prove, because of limited material, whether the peculiar free ends of the costæ in *fulvisetis* and *imperfecta*, there being not the faintest indication of the usual posterior union, is a constant character or not; if constant these forms would be species without a doubt, but meanwhile I have given the character no weight at all, the subspecies being separated wholly on general features of form and sculpture.

The Mexican *rugosissima* and *interrupta*, of Champion, also belong to *Glyptasida*, the latter probably being one of the subspecies of *ægra* Lec. Of the former I have a large series from Durango.*

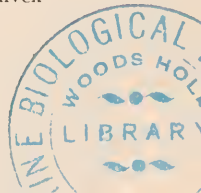
* *Rugosissima* is a species evidently distinct from *sordida*, or any other of the American species, being smaller, shorter, more convex, duller, more rugose and invariably coated

Pe'ecyphorus Sol.*Philolithus* Lac.

As originally organized by Solier this genus was a composite, no two of his four species being assignable to any one genus, but, as he figures the mouth-parts of *mexicanus* only, and as this is the only one having the large scalene terminal joint of the maxillary palpi—a sexual character as previously stated,—it is certainly proper to assume *mexicanus* as the type of *Pelecyporus*. It seems probable furthermore, judging by the description, that *mexicanus* is a species allied somewhat to the *ægrotus*—*morbillosus* type and that in a broad sense, therefore, *Philolithus* of Lacordaire must be considered a synonym. In the genus *Pelecyporus* the general outline of the body is quite different from that of *Glyptasida*, in having the anterior parts much smaller when compared with the hind body and in the truncate to broadly lobed form of the thoracic base, the hind angles never being posteriorly produced as they are in that genus, although occasionally posteriorly oblique as in *ægrotus*. The elytra have the two discal costæ of *Glyptasida*, but the inner one is very much reduced in prominence and is frequently obsolescent; the ligula and palpi are also nearly as in *Glyptasida*. The prosternum between the coxæ is longitudinally impressed along the median line; it slopes posteriorly much more gradually than in *Glyptasida*, its truncate apex being more prolonged over the apical margin of the mesosternum, this form of the prosternum constituting a constant and very important difference between the two genera. The outer apical angle of the anterior tibiæ varies somewhat; in some species, such as *carinatus*, the type of *Philolithus*, there is hardly any eversion; but in others, such as *ægrotus* and *actuosus*, the acute angle becomes rather prominent occasionally, though never very strongly so as it is in *Euschides* for example; the tibiæ are rather more cylindrical than in some other genera.

The species and subspecies of this, one of the more characteristic of the American genera of the tribe, are numerous and those within our faunal limits may be assigned to three very distinctly separated groups as follows:

with a dense crust of argillaceous material, from which the American species are generally almost free, indicating some differences in habit; for "adobe mud" is as all-pervading in New Mexico as it is in Durango. The prothorax is very broad, convex and has two small oblique smooth areas.



- Thoracic base transverse, the median part never projecting posteriorly further than the angles, the latter sometimes obliquely acute and prominent subposteriorly.....2
- Thoracic base broadly truncate medially, becoming anteriorly oblique at each side to the angles, which are always minute and inconspicuous.....3
- 2—Pronotum never carinate medially; elytra with transverse and more or less close-set rugæ.....Group I
- Pronotum always longitudinally tumid and carinate medially, the elytra more convex as a rule, never having transverse rugæ.....Group II
- 3—Body very variable in form and sculpture but with the pronotum never carinate and the elytra never transversely rugose, rather convex as in group II.....Group III

These groups in reality have the nature of subgenera; if they are ever so designated the second will take the name *Philolithus* Lac.

Group I—Type *ægrotus* Lec.

Elytra with the inner of the two discal costæ wholly obsolete and not even traceable, the second costa ending posteriorly in an acute prominence. Black, opaque throughout and glabrous, the elytral rugæ more shining; head broadly impressed, finely, sparsely punctate, the antennæ nearly as in the preceding genus, almost as long as the prothorax, the latter about as long as wide, not quite three-fifths as wide as the elytra, inflated and with the sides strongly and evenly rounded anteriorly, narrowing thence with broadly sinuate sides to the basal angles, which are obliquely acute and prominent; base posteriorly sinuate toward the angles; apex moderately sinuate, the angles obtusely prominent and very feebly subverted; surface feebly convex, closely and rather coarsely punctate medially, though finely punctate apically, becoming broadly concave, coarsely and densely punctate laterally, nearly smooth along the edge, which is but feebly and obtusely subcrenulate, thick and very sensibly and broadly reflexed; elytra oval, widest at the middle, with rounded sides and broadly rounded humeri, the basal margin not prominent laterally; apex rather narrowly produced and lobiform; surface nearly flat, the rugæ strong, well separated, disappearing on the apical lobe, the discal costa ending at the summit of the declivity, the marginal carina strong, curving inward rather abruptly behind for a short distance and rapidly disappearing; abdomen with sparse and even punctures, which are moderately coarse and deeply perforate; legs very long, slender, the tarsi long, the claws very well developed, the tibiæ and tarsi hispid with very small stiff setæ. Length 17.0–18.0 mm.; width 8.75 mm. Lower California (Cape San Lucas).....*ægrotus* Lec.

A—Similar to *ægrotus* but larger, deep black, less opaque, the elytral rugæ shining; prothorax distinctly wider than long, nearly three-fourths (♂) to three-fifths (♀) as wide as the elytra, flatter medially than in the preceding species, with the punctures somewhat small and sparse, finer anteriorly, the surface very broadly and

feebly reflexo-explanate and densely, confusedly punctate laterally, strongly, transversely rugose near the edge, which is only moderately thick and finely, strongly crenulate; elytra nearly as in *ægrotus*, more elongate and with the side margins strongly and abruptly though narrowly reflexed; abdomen less opaque, strongly alutaceous, rather finely but strongly, very sparsely punctate throughout; legs nearly as in *ægrotus* but with the hind tarsi rather more slender though less elongate; last joint of the maxillary palpi but slightly scalene (σ^7), to smaller though with comparatively little difference in shape (φ). Length 18.5–19.5 mm.; width 8.5–9.5 mm. Lower California... **limbatus** n. subsp.

Elytra with the inner of the two discal costæ evident as a rule, though feeble and incomplete, the second costa feeble and not terminating in a prominence; basal angles of the prothorax never obliquely acute but right or very slightly laterally prominent, the base virtually straight from side to side, sometimes with a very feeble sinus opposite the scutellum; elytra constricted just behind the basal margin, the sides of which are acutely prominent laterally, the apex rather gradually subacute, not lobiform; legs shorter.....2

2—Elytra much inflated, nearly twice as wide as the prothorax in the female. Blackish-piceous, subopaque, the elytral rugæ shining; head transversely, feebly impressed, finely, sparsely punctate, each puncture with a small coarse and very pale subdepressed and conspicuous hair; prothorax a third or fourth wider than long, three-fifths as wide as the elytra (σ^7), convex and coarsely, deeply, very confluent punctate throughout, with some smooth areas sublaterally toward apex, broadly explanate laterally, the edge but feebly reflexed, evidently and rather acutely serrulate, widest and broadly rounded at the sides before the middle, the sides converging thence basally, becoming nearly parallel near the basal angles, which are right, the apical angles not prominent, not at all everted; elytra not quite one-half longer than wide, widest at the middle, with evenly arcuate sides; surface with the costa strong, the space between them across the suture flat, outside of them rapidly sloping, the rugæ well separated, the lateral edges very finely explanate; concavities between the rugæ with smaller and sparse swollen punctures, not evidently pubescent; abdomen finely, sparsely punctate, each puncture with a very minute pale hair. Length (σ^7 , φ) 18.0–18.5 mm.; width 9.5–9.7 mm. Arizona,—Levette..... **corporalis** n. sp.

Elytra never much inflated, never much more than one-half wider than the prothorax and frequently much less.....3

3—First discal costa barely traceable and virtually obsolete. Body larger than in any other of this section, black, opaque; head nearly as in the preceding but with the sparse pale hairs shorter; prothorax similar in sculpture but larger and differing much in outline, three-fifths as wide as the elytra (φ), more than a fourth wider than long, subparallel, widest before the middle but with the sides subevenly arcuate from apex nearly to the basal angles, the latter minutely subprominent, the edge finely and strongly serrulate; elytra two-

thirds longer than wide, widest at the middle, with evenly arcuate sides, the surface notably convex, flat between the broadly, feebly and obtusely elevated suture and the costa, which is strong; rugæ fine, slightly shining, well separated, transversely tortuous laterally, the edge not at all thickened or reflexed, the depressions very opaque, with close and very feeble small tumidulous rugulosity; abdomen alutaceous, finely, moderately closely punctulate, the last segment strongly and closely, each puncture with a minute pale glistening hair. Length (♀) 20.0 mm.; width 9.6 mm. Arizona.

reptans n. sp.

First costa evident though vestigial and sometimes only formed by a succession of more pronounced or more longitudinal detached rugæ. 4

- 4—First costa very oblique, joining the suture at about the middle of the length. Form rather narrow and elongate, moderately convex, black, opaque, the elytral rugæ slightly shining; head only very slightly impressed, the small pale hairs very coarse; prothorax three-fifths as wide as the elytra, about a third wider than long, widest near the middle, the sides serrulate, rounded, converging and less arcuate to the blunt and subverted apical angles and less convergent posteriorly and rounding to the parallel and straight portion before the basal angles, the latter right and not very blunt; surface medially convex, coarsely, very densely and confluent punctate, broadly concavo-explanate and transversely rugose laterally; elytra three-fourths longer than wide, elongate-oval, with rounded sides, widest at the middle, the surface sharply and not densely, transversely plicate, the medial costa rather strong, the short oblique one feeble but distinct; depressed parts opaque, feebly and finely, tumidularly punctate, each puncture bearing a very minute and suberect pale and obvious hair; abdomen alutaceous, strongly micro-reticulate, finely, not densely punctate and with small pale hairs, the terminal segments more coarsely but not densely punctate. Length (♀) 17.7 mm.; width 8.4 mm. Without locality label but probably from southern Arizona.....**socer** n. sp.

First costa not oblique, gradually approaching the suture but separated therefrom, and, when more distinct, evidently uniting with the median costa near the summit of the declivity.....5

- 5—Discal costa unusually strong, the space between them and across the sutural regions nearly flat.....6

Discal costa more or less feeble, the surface of the elytra almost evenly convex from side to side.....7

- 6—Body rather narrow and elongate, unusually flat above, dark rufopiceous, dull, the elevations shining; head densely opaque as usual, the sparse pale hairs distinct; prothorax about a fifth wider than long, the converging sides basally becoming parallel or even feebly everted near the basal angles; base transversely rectilinear throughout; surface coarsely, deeply, closely and irregularly punctate, gradually deplanate but punctured and scarcely at all transversely rugose laterally, each puncture bearing a small yellowish hair which is unusually evident; elytra elongate-oval, one-half wider than the

prothorax, three-fifths longer than wide, widest at the middle, the surface with strong and abruptly formed but unusually few and widely separated rugæ, the interspaces slightly uneven and with numerous small granuliferous punctures, each bearing a very minute but evident hair; abdomen smooth, alutaceous, finely, not densely punctate, with the usual small pale hairs very distinct. Length (♂) 15.6 mm.; width 7.0 mm. Arizona. **abscissus** n. sp.

Body smaller, more inflated or with smaller prothorax, grayish-black, opaque throughout above, alutaceous beneath; head more impressed and with shorter and sparser minute hairs; prothorax similar in general form and sculpture but more opaque and with less evident hairs, the sides converging basally, broadly sinuate and not becoming parallel near the basal angles, which are right and rather less prominent; base with a circularly rounded deep sinus in more than median third; elytra scarcely more than one-half longer than wide, two-thirds wider than the prothorax, of the usual form, the rugæ smaller and more opaque, similarly abrupt and somewhat widely separated but rather feeble, the very opaque hollows not distinctly punctate; abdomen finely, closely punctate, the hairs very minute and much less distinct. Length (♂) 14.6 mm.; width 6.8 mm. Southern California. **fumosus** n. sp.

7—Elytra rather notably convex transversely from side to side. 8

Elytra nearly flat or but slightly convex. 9

8—Body black, opaque; prothorax rather longer than wide, the sides broadly rounded, serrate, posteriorly subangulate; basal angles right; surface variolate, toward the sides broadly subdepressed and plicate; elytra twice as wide as the prothorax, rounded-oval, strongly declivous posteriorly and subacute, truncate at base, the humeri [not strictly the humeri, which in this entire section are broadly rounded and subobsolete, but more properly the sides or ends of the basal margin] dentiform; margin, and, on each, two costæ—the internal the finer,—elevated and connected transversely by irregular elevated folds; epipleura nearly smooth. Length 18.7 mm. Mexico (Sonora). ***morbillosus** Lec.

A—Moderately stout, the prothorax unusually small, black, the upper surface feebly reddish-black; head densely opaque, with scattered pale hairs; prothorax less opaque, only just visibly wider than long, the rounded sides converging basally, becoming straight and parallel for some distance before the angles, which are right, not at all rounded; base with a broad and feeble sinus medially; surface very unequally punctate, with large impunctate spaces sublaterally, the sides deplanate and coarsely, coalescently punctate; each puncture has a small but obvious pale suberect hair growing, as usual, from its anterior margin; elytra nearly two-thirds wider than the prothorax, three-fifths longer than wide, of the usual form, the rugæ rather large, swollen, moderately close and somewhat shining, the depressions nearly smooth but opaque, the inner costa represented only by a succession of detached sinuous rugæ; abdomen alutaceous, finely, closely rugulose, finely punctate and

with the small pale hairs distinct. Length (σ^7) 15.0–16.0 mm.; width 7.1–7.8 mm. Southern Arizona (Baboquivari Mts.),—F. H. Snow.....**sobrius** n. subsp.

- B—Form nearly as in *sobrius*, but with the elytra much more shining, the depressions as lustrous as the rugæ, piceous-black, the prothorax relatively even larger; head somewhat as in *sobrius* but with finer pale hairs; prothorax (σ^7) nearly three-fourths as wide as the elytra or two-thirds (φ), as in *sobrius* but with the punctures less coarse and widely separated though unequally so, the flanks of the median convexity almost free from punctures, the broad lateral deplanate area coarsely, closely, transversely rugose and punctate; transverse base with the median sinus of the preceding barely at all traceable; elytra much smaller and less elongate in the male than in the female, the rugæ laterally strong and rather close-set, smaller and more comminuted medially, the depressions not obviously granulate; inner disjointed costa feeble, lost altogether from slightly behind the middle, the outer costa stronger in the male; abdomen nearly as in *sobrius*. Length (σ^7 , φ) 14.0–17.5 mm.; width 6.8–7.9 mm. Arizona,—Warren Knaus.

pacatus n. subsp.

- Body grayish-black, opaque, very much smaller in size and more slender; head feebly impressed, the sparse hairs unusually short; prothorax two-fifths wider than long, the arcuate sides becoming gradually very feebly sinuate basally but not straight or parallel even at the basal angles, which are very slightly more than right, not rounded; base with a very broad and rather feeble median sinus; surface not very coarsely, deeply, rather closely but not very coalescently punctate, with a transversely arcuate impression across the convex part and with numerous impunctate areas, rather narrowly deplanate and finely, transversely plicate laterally; elytra scarcely two-fifths wider than the prothorax, fully two-thirds longer than wide, evenly elongate-oval; surface with the rugæ rather small in size, well separated and only rather feebly elevated, not noticeably more shining, the interspaces with a few minute scattered granules, the costa rather feeble but fine and distinct, the inner costa very feeble, obsolete posteriorly; abdomen finely, not very sparsely punctate, the pale hairs evident. Length (σ^7) 13.0 mm.; width 4.8 mm. Arizona (Huachuca Mts.).....**parvus** n. sp.

- 9—Form stouter, more oblong, the elytral humeri broadly rounded as usual though rather obvious. Dark rufo-piceous in color, opaque, the elytra in great part notably shining even in the depressions, which do not differ sensibly in lustre from the rugæ; sexes not differing very much in outline; head feebly impressed, the sparse pale hairs shorter than usual; prothorax large, a fourth to third wider than long, the sides rather strongly serrulate, rounded, converging and broadly sinuate posteriorly as usual but becoming parallel near the angles, which are minutely acute and subprominent laterally; base very feebly sinuate in median third; surface only very moderately convex, with the punctures well separated, small anteriorly,

becoming coarse and closer near the base, very broadly explanate, coarsely, closely, transversely rugose laterally, the edge narrowly and very feebly subreflexed; elytra about one-half wider than the prothorax, suboblong, only moderately elongate, a little shorter and broader in the female, the costa distinct, the inner costa distinct though much feebler, finely sinuous, joining the median costa posteriorly; rugæ very numerous, small, strong and close-set, the interspaces not evidently punctate; abdomen finely but strongly punctate, rather closely so medially in the female. Length (♂, ♀) 15.5-16.0 mm.; width 7.5-7.9 mm. Arizona (in various southern localities).

piceus n. sp.

A—Similar to *piceus* but darker, sometimes virtually black and always more opaque, also differing much more in the disparity of the sexes; prothorax similarly large but less arcuate at the sides, parallel for some distance from the basal angles, the base and angles similar; surface more densely opaque, more closely and confluent punctate; elytra oblong, with feebly arcuate sides (♂), or oblong-oval with arcuate sides and rather less flattened surface (♀); rugæ small, very numerous and close-set, their crests shining, elsewhere more opaque, the costæ nearly as in *piceus*, the inner a little less evident and obsolete before attaining the median costa posteriorly; abdomen as usual. Length (♂, ♀) 15.5-17.0 mm.; width 7.4-8.6 mm. Arizona (San Bernardino Ranch, Cochise Co.), —F. H. Snow. *crudelis* n. subsp.

Form elongate, much more slender, the elytral humeri more obliquely and feebly rounded and obsolete or virtually so. 10

10—Deep black, opaque; head feebly impressed, with very sparse fine punctures and evident subdecumbent pale hairs as usual; prothorax from a fourth to a third wider than long, three-fifths to nearly three-fourths as wide as the elytra (♂), or relatively slightly smaller (♀), of the usual form in this section, the converging sides basally becoming parallel for a slight distance before the basal angles, which are right; base with a very feeble and indefinite median sinus; surface densely opaque, rather coarsely, deeply, confusedly and closely punctate, broadly explanate laterally, transversely rugose along the side margins, which are very feebly reflexed; elytra nearly three-fourths longer than wide, in sculpture nearly as in *crudelis*, densely opaque, the summits of the very numerous rugæ only feebly shining, the depressions finely, closely uneven; abdomen finely punctate and with the usual very small pale hairs. Length (♂, ♀) 14.0-16.3 mm.; width 6.0-7.6 mm. Arizona (San Bernardino Ranch, Cochise Co.), —F. H. Snow. *snowi* n. sp.

Dark rufo-piceous, much less opaque and more elongate, with relatively larger prothorax and longer, as well as decidedly thicker, legs; head with the stout decumbent pale hairs longer and much more numerous; prothorax (♂) fully three-fourths as wide as the elytra, a third wider than long, nearly as in *snowi* but with the close-set punctures more equal in size throughout and with the small pale hairs more distinct; elytra slightly more elongate, fully three-fourths longer than wide, flatter, widest somewhat behind the middle, the

humeri slightly evident, the feeble inner costa distinct and joining the outer near apical fifth, the rugæ numerous, close-set and strongly shining, the interspaces not so densely opaque as in *snowi*, nearly smooth; abdomen opaque, nearly similar. Length (♂) 15.0 mm.; width 6.5 mm. Arizona (San Bernardino Ranch, Cochise Co.,—3750 feet),—E. G. Smyth.....**subtenuis** n. sp.

The species described under the name *morbillosus*, by LeConte, is generally identified as any one of the forms from *corporalis* to *subtenuis* in the above table. I have selected to represent that local Sonoran species, a specimen of rather large size and deep black opaque integuments, with rather fine, tortuous and widely separated rugæ, collected by Prof. Snow in the Baboquivari Mts.; it has a very distinct and broadly subangulate sinus opposite the scutellum. These numerous allies of *morbillosus* are all built upon the same plan, presenting very few diversities of structure and are therefore difficult to define recognizably, though readily separable on sight.

Group II—Type *carinatus* Lec.

Basal angles of the prothorax more or less briefly, obliquely prominent and acute.....2

Basal angles right, not rounded but not at all prominent.....3

2—Body stout, convex, deep black, subopaque throughout, the elytra alutaceous; head feebly impressed, finely and sparsely punctate, the minute hairs erect, dark and indistinct; prothorax very nearly as long as wide, parallel, widest slightly before the middle, the sides evenly and moderately arcuate, becoming slightly sinuate very near the basal angles; base transverse, slightly sinuate near the angles; surface convex and longitudinally, sharply crested medially, the crest obsolete basally, rather abruptly, feebly reflexed at the sides, the punctures small and separated anteriorly, large and coalescent basally, equal but rather coarse and contiguous laterally, the reflexed edge impunctate but granulate and plicate, very thick, feebly crenulate; elytra two-thirds (♂) to four-fifths (♀) wider than the prothorax, fully one-half longer than wide, evenly oval, widest at the middle, deeply constricted just behind the basal margin, the ends of which are laterally prominent but not very acute, not so strongly as in the *morbillosus* section; surface evenly convex, finely and feebly, transversely rugulose, the outer costa feeble, the inner almost to quite obsolete, the former extending only to the summit of the convex declivity, the side margin almost attaining the tip; abdomen more or less rugulose laterally, rather finely but strongly, somewhat sparsely muricato-punctate, each puncture with a very small dark and inconspicuous hair; male and female similar, except that the prothorax is a little larger and the legs notably longer and thicker in the former. Length (♂, ♀) 20.0–22.0 mm.; width 10.0–11.3 mm. Southern California (near Colorado Desert),—G. W. Dunn.

carinatus Lec.

Body very much more slender, very convex, deep black, anteriorly opaque, the hind body shining; head obsoletely impressed, finely, very sparsely punctate; prothorax (♀) small, about as long as wide, widest slightly before the middle, parallel, the sides broadly, feebly arcuate, slightly sinuate basally, the basal angles rather strongly, obliquely prominent and acute; surface as in *carinatus* but with the punctures very small, largely wanting on the slope of the carina anteriorly, stronger, closer laterally, the edge narrowly and distinctly reflexed and finely crenulate; median carina extending almost to the base; elytra nearly three-fourths longer than wide, evenly oval, very strongly, evenly convex from side to side, almost smooth, feebly, irregularly wrinkled, with some short transverse impressions along the margins and costa; inner costa obsolete, represented by a feeble swelling; abdomen alutaceous, closely, strongly and asperulately punctate and with minute blackish hairs. Length (♀) 18.5 mm.; width 8.4 mm. California (San Felipe).....**sophistes** n. sp.

3—Oblong-elongate, deep black, opaque anteriorly, the hind body notably shining; head with the fine punctures moderately sparse; prothorax large, slightly wider than long, parallel, widest at about the middle, nearly as in *carinatus*, the edge very thick and finely crenulate, the carina obsolescent behind the middle, the punctures very coarse and confluent basally, coarse but separated laterally, fine and close near the carina anteriorly but largely wanting on its slopes; sides broadly deplanate, not evidently reflexed; elytra two-thirds longer than wide, two-fifths wider than the prothorax, nearly parallel and feebly arcuate at the sides, the rounded humeri unusually evident; surface nearly as in *sophistes*, except that the sutural parts between the two costæ are much less convex; abdomen similarly but less closely punctate. Length (♂) 19.0–19.5 mm.; width 9.0–9.4 mm. Lower California**quadripennis** n. sp.

Among the three examples of *carinatus* before me the male is decidedly larger than either of the two females, but does not differ much in form, except in the evidently larger prothorax and the notably longer as well as thicker legs.

Group III—Type *actuosus* Horn.

Prothorax strongly reflexed at the sides, the surface not granose, more or less finely, sparsely punctate, the punctures simple or slightly asperulate.....2

Prothorax not reflexed but deplanate at the sides, the surface granose at least medially except in *opimus*.....3

Prothorax densely and roughly punctate, not reflexed at the sides, strongly obtrapezoidal.....6

2—Form strongly ventricose in both sexes, deep black, moderately opaque, the elytra and abdomen rather shining; head feebly, indefinitely impressed, finely and sparsely punctate, the minute hairs erect, dark and inconspicuous; prothorax a third to nearly half (♀) wider than long, widest slightly before the middle, scarcely more than

half as wide as the elytra, the sides subevenly rounded from apex to base, the basal angles abruptly feebly and minutely prominent, the apical everted and prominently acute, the broadly arcuate base broadly, feebly bisinuate medially; surface broadly, evenly convex, becoming gradually broadly and strongly reflexed laterally, the punctures small, sparse and nearly simple, becoming larger, stronger and mingled with transverse plicæ near the edge, which is feebly and irregularly crenulate; elytra two-fifths to one-half longer than wide, widest at the middle, the sides evenly arcuate, the humeri obliterated, the oblique sides basally feebly sinuous to the base, which is not dentate laterally; surface nearly smooth and punctureless, the costa very strongly elevated, narrow and acute, the surface suturally between them flat, exterior to them very steeply declivous, the inner costa obsolete and barely at all traceable; abdomen finely, sparsely punctate, slightly more closely so and more or less longitudinally and closely plicate at the base of each segment; legs very long and slender, shorter in the female. Length (♂, ♀) 20.0–21.0 mm.; width 11.2–12.0 mm. Arizona (Yuma).....**adversus** n. sp.

Form moderately ventricose (♂) or very strongly so (♀), grayish-black, densely opaque throughout above, more or less shining beneath; head very broadly, indefinitely impressed, with rather small, well separated punctures, the hairs dark and minute; prothorax relatively small, one-half wider than long, the apex slightly to decidedly narrower than the base, moderately and circularly sinuate, the angles not very acute, not everted; sides strongly rounded and subprominent at the middle, converging becoming straight apically, equally converging posteriorly, feebly arcuate and becoming sinuate very near the basal angles, which are minutely acute and subprominent; base transversely rectilinear; surface feebly convex, very finely, rather sparsely punctate, the punctures slightly asperulate, the sides broadly, very strongly reflexed and transversely, irregularly and coarsely rugose, the edge thin and strongly, irregularly crenulate; elytra evenly oval, widest at the middle, one-half (♂) to a third (♀) longer than wide, two-thirds wider than the prothorax in the former to about twice as wide in the latter, the apical lobe moderate in size, rather distinct; surface flat across the suture between the strongly elevated, thin and acute medial costæ, rapidly sloping thence to the acute and crenulate side margins, the punctures very minute, remotely scattered and granuliferous; inner costa barely traceable; abdomen asperulately and somewhat finely punctate; legs moderately long, very slender, subsimilar in the sexes. Length (♂, ♀) 16.0–20.0 mm.; width 8.4–12.0 mm. California (Upland, San Bernardino Co.),—Fuchs.....**reflexus** n. sp.

- 3—Pronotum not at all granose but simply punctured. Body large, suboblong, ventricose, dull in lustre, the elytra shining, deep black, glabrous; head unimpressed, nearly flat above, finely, evenly and rather sparsely punctured, each puncture with an extremely minute hair; prothorax rather well developed, nearly a third wider than long, widest before the middle but with the sides broadly rounded, mod-

erately converging, becoming straight posteriorly to the obtuse but sharp though not at all prominent basal angles, the surface broadly, evenly convex medially and with small but deep and perforate, rather close-set and perfectly simple punctures, mingled with a few that are very much smaller, the punctures becoming a little smaller on the lateral slopes of the convexity and, toward the sides, coarser and sparser though similar in form; elytra oblong-oval, more than two-fifths longer than wide and, rather behind the middle, almost three-fourths wider than the prothorax, the discal carina on each strong, the space between them and across the suture flat, the inner carina wholly obsolete, the general surface smooth, shining, with very small and sparse granules, becoming very minute and obsolescent toward the suture; legs moderate, cylindric, the hairs very small, fine, sparse and inconspicuous, the tarsi notably short. Length 22.0 mm.; width 12.4 mm. The type probably male. Southern California.....**opimus** n. sp.

Pronotum granulate, the granules more or less small and well separated. 4
Pronotum densely granulate-tuberculose throughout.....5

4—Form stout and strongly ventricose, black; head opaque, finely granulate; prothorax quadrate, broader than long, the sides moderately rounded, the margin finely crenulate, the apex emarginate with the angles acute; base nearly truncate, the angles rectangular; surface coarsely punctate along the margin, finely granulate medially; elytra rounded-oval, very convex above, opaque, finely and sparsely granulate, the basal margin denticulate at the sides, the latter margined; surface with the outer costa extending two-thirds the length of the elytra, the inner costa obsolescent; under surface opaque, finely punctured. Length 14.5–23.0 mm.(!) California (Owen's Valley). [*Asida actuosa* Horn].....**actuosus** Horn

Form much more slender, smaller in size, black, opaque, the prothorax about two-fifths wider than long and two-thirds as wide as the elytra; head minutely, rather closely punctate, the punctures gradually but feebly asperulate posteriorly; prothorax widest but little before the middle, with strongly rounded sides, converging and less rounded apically and basally, strongly crenulate, the apical angles minutely everted and acute, the basal obtuse but denticulate externally; base broadly, rectilinearly truncate medially, thence anteriorly oblique and arcuate to the angles; surface rather strongly convex medially and with strong tuberculiform granules, becoming very fine on the slopes of the medial convexity, broadly and feebly concavo-deplanate laterally and more densely, rather coarsely rugulose; elytra very evenly elongate-oval, one-half longer than wide, the ends of the basal margin acutely dentiform, the general surface transversely, rather strongly convex throughout, finely, sparsely granulate, the outer costa fine but rather strong, the inner evident though feeble, joining the outer a little behind apical third; abdomen finely, asperately punctate. Length (♂) 16.0 mm.; width 7.8 mm. Utah (southwestern),—Weidt.....**haruspex** n. sp.

A—Somewhat as in *haruspex* but much more elongate, piceous, the

elytra brownish-rufous; head very finely, simply punctate throughout; prothorax small, almost as long as wide, widest at the middle, the sides there strongly rounded, converging and straighter apically and basally, strongly crenulate throughout, the apical and basal angles acutely dentate, the former slightly everted; median convexity with moderate punctures, which are strongly, obtusely asperate but not tubercularly granose, the broadly deplanate and feebly concave sides not rugose but with rather coarse, widely separated, simple punctures; elytra very regularly elongate-oval, almost three-fourths longer than wide and almost twice as wide as the prothorax, the ends of the basal margin strongly dentate, otherwise nearly as in *haruspex*, except that the surface is much less opaque, alutaceous and somewhat shining and the inner costa, instead of being unusually evident is almost completely obsolete; abdomen more shining and more strongly, asperately punctate. Length (♀) 18.5 mm.; width 8.8 mm.

Utah (southwestern).—Weidt.....**ellipsipennis** n. subsp.

Form very ventricose, the anterior parts relatively much smaller than in any of the preceding species, deep black, opaque, the elytra more alutaceous; head finely, not densely, asperulately punctate; prothorax less than half as wide as the elytra, two-fifths to one-half wider than long, widest near the middle, the sides rounded and finely, unevenly crenulate, the apical angles acute, feebly everted, the basal obtuse, not rounded, sometimes with a minute, laterally prominent point; base broadly arcuate, more truncate medially; surface moderately convex, with the granules strong and intermingled with more minute ones medially, gradually becoming narrowly explanate, densely and moderately rugose laterally; elytra much inflated, evenly oval, about one-half longer than wide, the sides of the base parallel for a very short distance but scarcely prominent; surface rather strongly, evenly convex throughout the width, finely, not densely granulate, the outer costa rather fine but strong, the inner very fine and subobsolete though evident; abdomen finely, closely, subgranularly punctate. Length (♀) 18.5–19.3 mm.; width 11.5 mm. Nevada (Goldfield, Esmeralda Co.),—Nunnenmacher.....**pantex** n. sp.

5—Body much smaller, narrower and more parallel than in any of the preceding, deep black, rather shining; head feebly impressed, finely, densely, asperately punctate, the minute erect hairs indistinct; prothorax small, slightly transverse, widest evidently before the middle, the sides feebly crenate, rounded, gradually feebly converging and straighter basally, becoming very feebly sinuous just before the angles, which are right, not prominent, the apical obtuse, slightly blunt, not at all everted, the apex unusually feebly sinuate, the base broadly arcuate, feebly sinuate medially; surface very broadly, evenly convex, densely granulato-tuberculate, rather rapidly sloping laterally and very narrowly explanate and more confusedly rugose at the sides; elytra oblong, parallel, with feebly arcuate sides, three-fifths longer than wide, fully twice as wide as the

prothorax, the sides rapidly rounding at base and still more so posteriorly, the sides of the basal margin abruptly parallel; surface strongly, evenly convex transversely, finely, strongly, very closely granulate, the outer costa unusually close to the sides, moderate and not abruptly formed, disappearing at the summit of the declivity, the inner costa obsolete though slightly traceable; abdomen rather finely but very strongly, closely asperato-punctate; legs unusually short, very slender. Length (♀) 14.5 mm.; width 7.2 mm. Eastern Washington State.....*corrosus* n. sp.

- 6—Form rather narrower, more constricted, the hind body more pyriform, black, dull in lustre; head densely punctate; prothorax obtrapezoidal, distinctly wider than long, widest at apical third, the apex feebly sinuate, the angles not prominent anteriorly, the sides arcuate in front, oblique behind, the hind angles right, not prominent; surface rather strongly convex, densely and rather roughly punctate, more roughened at the sides and base; elytra oval, broadest behind the middle, one-half longer than wide, the base equal in width to the thoracic base, the humeri oblique; marginal costa extending to apical fourth; surface convex, with a distinct and rather strong costa extending beyond apical third, within this costa a much fainter one, nearly as long and slightly oblique to the suture; surface finely and moderately closely granulate; prosternum coarsely, closely punctate; propleura punctato-granulate; meso- and metasternum granulate; abdomen muricately punctate, more coarsely at the sides; legs muricately punctate and with short hairs. Length 13.0 mm. Oregon. [*Asida densicollis* Horn].....*densicollis* Horn

The various species of the third subgeneric group of *Pelecyphorus* are more strongly differentiated among themselves than in the two others and will prove to be rather numerous. The drawing of *densicollis* given by Horn (Proc. Cal. Acad., Ser. 2, IV, plate vii), indicates a species widely different in appearance from *corrosus*, although they are both much more strongly and densely sculptured than the others; they form a peculiar northern section of the group. In his description, Dr. Horn states that the medial costa in *actuosus* extends to apical third, whereas in the figure it is drawn nearly to the elytral apex. I have a specimen from San Bernardino, Cal., which corresponds very nearly with this figure.

Gonasida n. gen.

With a general habitus suggestive of some forms of *Euschides*, such as *angulatus*, and with a similar thoracic base, but other characters harmonizing more closely with *Pelecyphorus*, such as the small and retractile ligula and form of the prosternum, this genus differs from either of those genera in the remarkable form of the

prothorax, with its dilated and aliform reflexed angulate sides, tarsal vestiture of rather long recumbent fulvous hairs and in the nature of the elytral sculpture, which is suggested nowhere within the limits of those large and rather polymorphous genera. The body is elongate-suboval, constricted at the waist, convex and virtually glabrous. The head, palpi, eyes, epistoma and antennæ are nearly as in *Pelecyporus*, the mentum large, rounded at the sides, resting upon a very pronounced gular pedestal, leaving the maxillary cardo basally exposed within the large lateral openings, the projections bounding the buccal cavity unusually short. The ligula is small, thick, its apex transversely concave, the upper edge of the concavity acutely ridged, and it may either have its apex slightly exposed or be completely withdrawn under the mentum, in a manner resembling *Microschatia*, *Glyptasida* and *Pelecyporus*, but notably different from that of *Euschides*. The elytra each have, except in *gravidæ*, three distinct double impressed discal striæ, with the included lines convex, the lateral one generally incomplete or in great part obliterated in the general rugosity, and there is another flatter one margining the suture; these double lines are separated widely by confusedly rugose to nearly smooth intervals, which may become rather strongly convex but are generally feebly so; the angulate lateral margin is evident as a rule but rather obtuse and never cariniform. The legs are long and slender, apparently not differing so much sexually as is the rule in *Pelecyporus*, the tarsi cylindric, relatively rather short, and the anterior tibiæ are strongly everted externally at tip and acute though not spiniform. The prosternum between the coxæ is almost exactly as in *Pelecyporus*, being gradually declivous posteriorly, with its truncate apex somewhat expanded upon the margin of the mesosternum.

The species and subspecies are moderate in number; those in my cabinet may be known by the following descriptions:

- Prothorax in both sexes distinctly narrower than the elytra.....2
 Prothorax as wide as the elytra, at least in the male.....6
 2—Elytra with the raised lines indistinguishable. Stout, black or feebly picescent and shining throughout; head subopaque, broadly impressed, the oblique impression at each side of the epistoma deep, the punctures fine and sparse and virtually hairless, coarser, denser and each with a short very stiff blackish seta about the entire periphery from eye to eye, the eyes convex; prothorax widest at the middle, fully two-thirds wider than long, nearly three-fourths as wide as the

elytra, the deep apical sinus much narrower than the base, the latter transverse, feebly arcuate at the sides, very broadly and feebly sinuate medially; surface broadly, very feebly convex, extremely minutely and remotely punctulate, becoming broadly, rather rapidly and strongly reflexed, flattened and coarsely rugose in transverse sinuous folds laterally, with a few coarse, sparse punctures in the concavity at the origin of the reflexure, the side margins feebly crenulate and thin, acutely and prominently angulate at the middle, thence converging and broadly arcuate to the everted and acutely prominent apical angles and rather less converging, broadly and evenly sinuate throughout to the very obtuse but not rounded basal angles; scutellum equilatero-triangular, tumid, shining; elytra widest very slightly behind the middle, twice as long as wide, gradually acute in apical two-fifths, very gradually and moderately declivous behind, the sides moderately converging and arcuate to the truncate base, which is acutely dentate laterally, but scarcely as wide as the thoracic base, the surface very strongly, evenly convex, with close-set, broadly and feebly impressed, very unevenly rugulose, subequal lines throughout the width, the intervals but feebly convex, confusedly rugulose though shining and subimpunctate, the lateral margin very obtuse and obsolete, barely traceable; abdomen minutely, remotely punctulate; legs moderately slender, very elongate, the hind tibiæ very strongly bent. Length (♀) 30.0 mm.; width 12.8 mm. Arizona..... **gravida** n. sp.

Elytra with the raised lines very distinct, convex, separated by wide rugulose intervals. 3

- 3—Angulate sides of the prothorax narrow, deplanate but only just visibly reflexed. Body narrower, black, the hind body dark rufopiceous throughout; head distinctly tri-impressed, the posterior impression feeble, the punctures rather small and well separated; prothorax barely three-fifths as wide as the elytra, about a third wider than long, widest very evidently before the middle, where the angle is rather blunt, the sides converging and arcuate to the small and everted but rather blunt apical angles, moderately converging and sinuate to the basal angles, which are obtuse; apex only moderately sinuate and nearly as wide as the base, the latter as in *gravida*, except a small feeble prominence opposite the scutellum; surface with the small sparse punctures more evident, rather strong near the apex, coarse laterally, the marginal region more narrowly rugose; scutellum similar; elytra twice as long as wide to rather more, evenly elongate-oval, widest near the middle, the basal margin laterally dentate; surface not very shining, more or less strongly, evenly convex, the fine even raised lines rendered very distinct by reason of the unusually strongly, closely and evenly rugose, broad and perfectly flat intervals; abdomen polished, very minutely, remotely punctulate; legs similar, the hind tibiæ strongly, more evenly arcuate throughout their length. Length 25.0–26.0 mm.; width 10.5–10.9 mm. New Mexico (Santa Fé)..... **inferna** n. sp.

Angulate sides of the prothorax more acute, broader and distinctly re-

- flexed, the prothorax widest slightly before the middle, the thin edges not or only very feebly crenulate.....4
- 4—Scutellum equilatero-triangular, nearly flat; apical angles of the prothorax rounded, not at all everted. Form moderately stout and convex, piceous-black, the elytra rufous, clouded with piceous laterally; head feebly impressed, the punctures distinct, moderately close-set, each with the very minute hair pale and evident; prothorax one-half wider than long, the sides and base as usual, the latter broadly arcuate, with the broad feeble median sinus rather distinctly limited; punctures fine and sparse, the surface broadly, evenly, rather feebly convex, gradually becoming coarsely but loosely punctate in the lateral concavity, the moderately wide, strongly reflexed sides transversely rugose and coarsely punctate; elytra (♀) sensibly less than twice as long as wide, one-half wider than the prothorax, evenly oval, evenly but only moderately convex above, feebly depressed narrowly along the suture, the sides of the base feebly prominent, the surface alutaceous, the feebly convex lines separated by broad rugose intervals, over which are scattered sparse fine punctures, the third and fourth intervals more convex and not so broad, the lateral margin rather acute and well marked; abdomen occupying fully half the entire length, minutely, sparsely punctate; legs nearly as in *inferna*. Length (♀) 25.0 mm.; width 11.5 mm. Kansas (Gove Co., 2500 ft.),—F. H. Snow. *compar* n. sp.
- Scutellum longer than wide, acutely pointed, not tumid; apical angles of the prothorax everted and more or less prominent.....5
- 5—Body large, much elongated, convex, shining, piceous-black, the elytra dark rufous, dusky at the sides; head deeply, obliquely bi-impressed, finely, sparsely punctate; prothorax nearly as in *compar* but with the apical angles acutely everted and prominent; scutellum nearly twice as long as wide, very acute; elytra fully twice as long as wide, oval, convex, gradually acute behind, the surface but very faintly alutaceous, the rather wide convex lines separated by intervals which are only a little wider than themselves, quite as convex and only very feebly rugulose, the small and sparse punctures throughout irregular in size and shape, some being rather elongate, this character being more marked than in *compar*; abdomen shining, very obsoletely rugulose, minutely and remotely punctate; legs long and slender, the hind tibiae evenly and feebly bowed; hairs on the under side of the tarsi long and deep fulvous-red. Length 27.5 mm.; width 11.8 mm. Texas and New Mexico. [*Pelecyporus elatus* Lec.].....*elata* Lec.
- A—As in *elata* but smaller and more slender, the elytra more evidently striate, black; prothorax slightly shorter than wide, the sides broadly and gradually reflexed, rounded anteriorly, angulate in the middle, and, thence to the base, sinuate; base truncate, the posterior angles almost right; surface medially sparsely and finely, laterally more coarsely and rugosely, punctate; elytra slightly wider than the prothorax, elongate-oval, acuminate behind, moderately deeply punctato-scabrous; striae distinct, broad, moderately

deep; humeri minutely porrect; epipleura abruptly deflexed. Length 23.8 mm. Santa Cruz,—Mexican Boundary Commission. [*Pelecyphorus difformis* Lec.].....**difformis** Lec.

B—Much smaller than *elata*, black, the elytra more or less faintly rufescent suturally; head strongly, arcuately impressed transversely, the small punctures rather sparse, each with a very minute pale hair; prothorax one-half wider than long, three-fifths to two-thirds as wide as the elytra, as in *elata* but with the apical angles only feebly and obtusely everted, the reflexed sides not transversely rugose but coarsely, loosely punctate to the edge, with scarcely any rugæ; scutellum even more than twice as long as wide, slender, very acute; elytra not quite twice as long as wide, the posterior acumination more rapid, the sides of the base rather acutely dentiform, the surface very faintly alutaceous, the convex lines narrow, the intervals very much broader, feebly rugose, as convex as the lines (♂) or nearly flat (♀), the fine punctures as in *elata*; abdomen nearly smooth, minutely, remotely punctulate. Length (♂, ♀) 20.5–23.0 mm.; width 9.2–10.6 mm. Kansas (locality unrecorded).....**reducta** n. subsp.

C—Nearly similar but very slender, piceous-black, the elytra wholly rufous, faintly piceous on the flanks; head subopaque, impressed and punctate nearly as in *reducta* but with the posterior impression along the median line deeper and more evident; prothorax fully three-fifths wider than long, nearly as in *reducta*, and, similarly, with the apex as wide as the base, but with the apical angles still more obtuse and obsoletely everted and the coarse punctures laterally sparser, the rugæ wholly wanting; scutellum similar; elytra evidently more than twice as long as wide, very gradually acute posteriorly, the base similar, much smoother than in any other form, the lines broad, very feebly convex and not sharply defined, the sutural interval as wide as the first line, the second twice as wide and but feebly convex, the surface scarcely at all rugose, subalutaceous, the fine punctures sparse, very distinct, unequal in size to some extent; side margins acute but not cariniform; hind tibiæ almost straight. Length (♂) 25.5 mm.; width 10.0 mm. Kansas (locality unrecorded).....**prolixa** n. subsp.

Body large, stouter, black, the elytra slightly piceous; head larger than in *elata* and allies, strongly, broadly impressed in transverse arc, with small sparse punctures, each bearing a very small but coarse fuscous hair; prothorax three-fifths wider than long, two-thirds as wide as the elytra, of the same general form and sculpture as in the preceding, the broadly sinuate apex somewhat wider than the base, the apical angles minute, slightly blunt, feebly everted; surface broadly, evenly convex, finely, sparsely punctate, the rather broadly reflexed sides densely, coarsely punctate, becoming transversely and closely rugose along the edge throughout; scutellum broader, nearly one-half longer than wide, very acute; elytra twice as long as wide, more oblong-oval or less narrowed basally, the apex more abruptly produced or lobiform, the sides of the base acutely dentic-

ulate; surface alutaceous, evenly and strongly convex, the lines rather narrow and convex, the intervals broad, scarcely at all convex, rather strongly creased, subrugose and with numerous rather coarse, sparse and very irregular punctures; side margin in the form of an elevated, obtusely rounded, prominent ridge extending almost to the apex; epipleura feebly inflexed, deep as usual, more polished, feebly rugulose and finely, sparsely punctate; abdomen with the punctures sparse but larger than usual, the hind tibiæ very feebly, evenly bowed. Length (♀) 27.0 mm.; width 12.2 mm. Colorado (La Junta).....**aucta** n. sp.

- 6—Form rather slender, black; head distinctly, obliquely bi-impressed and also impressed on the median line basally, only feebly alutaceous, finely, sparsely punctate, the minute hairs evident; prothorax fully three-fourths wider than long, nearly as in *elata* but with the sides more gradually and broadly reflexed, coarsely, closely punctured and transversely, moderately rugose, the edge with some small punctures only; apex evenly sinuate and as wide as the base, widest at the middle; apical angles very obtuse, scarcely at all everted; elytra evidently more than twice as long as wide, evenly elongate-oval, gradually obtusely acuminate behind, widest at the middle, the sides of the base obliquely prominent; surface evenly, not very strongly convex, only slightly alutaceous, the lines moderate, convex, the intervals about twice as wide and equally convex, nearly smooth, the broadly impressed lines confusedly, closely and rugosely punctured; side margin obtusely elevated, joining the second line near the apex; epipleura with a lower marginal convex ridge extending almost to the base, this character being more developed than usual; abdomen minutely, remotely punctate; legs rather stouter than usual, the hind tibiæ feebly bowed medially, strongly, closely punctato-asperate. Length (♂) 25.0 mm.; width 10.0 mm. New Mexico (Grant Co.).....**alaticollis** n. sp.

Difformis is placed as a subspecies of *elata* on the opinion of G. H. Horn and because the published characters give evidence of no striking differential character, but its locality is rather uncertain.

The genus *Tisamenes*, of southern Mexico, seems to be allied rather closely to *Gonasida*, having a nearly similar form of body, legs and prothorax, but differs in its striking and peculiar vestiture, short antennæ, stiff inferior hairs of the tarsi and in elytral structure, to such an extent that there can be but little doubt of the mutual distinctness of the two genera. *Asida ingens* Champ., will form still another genus, probably not closely allied to either *Gonasida* or *Tisamenes*.

Bothrasida n. gen.

This genus and the following, though having the rough elytral sculpture more characteristic as a rule of the *Pelecyphorus* series,

possesses the tumid, angularly incised and non-retractile ligula of *Euschides* and other subsequent genera of the tribe. The form of the body in *Bothrasida* is somewhat ventricose, or with the anterior parts reduced as in *Pelecyporus*, the eyes differing in having the anterior arcuate margin feebly sinuate near the middle. The antennæ, epistoma, labrum and palpi are of the same general type as in the preceding genera, but the mentum is rather smaller, transversely obtrapezoidal and loosely fitting the sides of the buccal opening, the gular pedestal short and broad, with its flanking apertures small. The legs are noticeably short but slender, the tarsi slender, with short stiff black to fulvous spinules beneath and the anterior tibiæ minutely everted and acute externally at tip. The trochantin is well developed. The prosternum is more strongly declivous behind than in *Pelecyporus* and obtusely rounded, descending vertically upon the mesosternal margin; it is generally impressed longitudinally between the coxæ.

The only species in my cabinet at present is the following:

Form moderately ventricose, convex, the upper surface gradually more feebly so, feebly alutaceous, deep black throughout, without metallic lustre of any kind; head declivous toward the depressed epistoma, coarsely, closely punctate and with minute pale hairs; labrum moderately transverse, distinctly sinuate medially at apex, the antennæ not very stout; prothorax a fourth to third wider than long, three-fifths to two-thirds as wide as the elytra, widest slightly before the middle, where the sides are subinflated and rounded, converging and straight thence to the rather blunt tips of the advanced apical angles, converging, becoming gradually deeply sinuate, basally, the angles obliquely very acute and prominent; apex deeply sinuate, slightly narrower than the base, which is deeply bisinuate; surface broadly, moderately convex, coarsely, unevenly and in part subconfluently punctate, becoming rather narrowly concavo-explanate and transversely rugose laterally, toward base broadly excavated along the median line, and, on each side of the latter just before the middle, with a deep circular indentation, also with two or three indentations placed in oblique line near lateral fourth, from before the middle nearly to the base, the middle one in each line the largest and deepest; apical angles with short yellow vibrissæ extending upon the eyes; scutellum very small, equilatero-triangular, somewhat sunken, not shining; elytra two-fifths longer than wide, oval, with arcuate sides, widest slightly behind the middle, the thoracic angles overlapping and within the humeri, each with two large, very obtuse, irregular ridges, the inner the longer, higher, perfectly continuous and nearly straight, the outer feeble and sinuous, the two joined transversely and also with the lateral margin and

narrow even flat sutural lines by transverse ridges thus including large uneven depressions, the surface with rather small sparse punctures throughout; lateral margin rather acute but not in the least carinate or reflexed, disappearing at some distance from the apex; abdomen smooth, rather shining, with small sparse simple and perforate punctures. Length (♀) 14.5–16.0 mm.; width 7.3–8.0 mm. Mexico (Guerrero),—Baron.....***baroni** n. sp.

This species is allied rather closely to *clathrata* Champ., but differs in its apparently less elongate form and in the absence of any trace of the faint æneous lustre mentioned by Mr. Champion, who states of *clathrata* also, that the hind thoracic angles are not acute though prominent, the inner ridge of the elytra interrupted and the side margins of the elytra slightly reflexed. I know certainly of no other species than *clathrata*, *funesta* and *baroni* that can be included under *Bothrasida*.

Notiasida n. gen.

The name *Notiasida* is here proposed for another Mexican genus allied rather closely to the preceding and also comprising relatively few species, of moderate or small size. The body is either of parallel or ventricose, moderately to feebly convex form, with the prothorax frequently as wide as the elytra or nearly so, as in *Asidopsis opaca* and allies. The eyes, epistoma, labrum, mentum, palpi, legs and tarsi are nearly as in *Bothrasida*, but the gular pedestal is less abbreviated, the antennæ herissate with very stiff spiniform setæ, and the trochantin smaller; the prosternum between the coxæ becomes similarly vertical at tip. The upper surface is not glabrous as in *Bothrasida*, but clothed sparsely with short and very stout grooved setæ, sometimes becoming squamiform, and the elytra have a very different type of sculpture, consisting on each of three feebly elevated lineiform aggregates of anastomosing elongate glabrous areas, the two inner of which are generally more or less geminate; this appearance is however almost lost as a rule in the females.

The two species known to me by actual examples may be described as follows:

Form parallel, moderately narrow, rather depressed, deep black, rather shining, not densely coated with earthy matter, each puncture of the anterior parts and of the elytral depressions with a very short and extremely stout yellow decumbent seta; head very feebly,

indefinitely impressed, finely, sparsely punctate anteriorly, gradually coarsely, densely and unevenly so toward base; antennæ moderately stout, the spongiose areas of the tenth joint almost uniting on the sides; prothorax two-fifths wider than long, widest slightly before the middle, the sides parallel and broadly, evenly arcuate to the tip of the moderately advanced, rather blunt and briefly vibrissate apical angles, very feebly sinuate toward base, the angles much produced posteriorly, with their apices blunt, resting within the reflexed humeri; base deeply bisinuate, wider than the apex, which is deeply and broadly sinuate; surface nearly flat, with rather coarse close impressed punctures, a narrow and slightly interrupted median line and a few isolated spots more embossed and smooth, feebly concave and reflexed laterally, with the punctures not coarser but sparse; scutellum small, acute, as wide as long, not sunken; elytra fully three-fourths longer than wide, barely wider than the prothorax, the parallel sides feebly arcuate, the humeri right but rounded, gradually and evenly ogival behind, the surface feebly convex, the three feebly elevated lines of anastomosing glabrous spots very uneven, the external very narrow, the side margins acute and narrowly reflexed, extending nearly to the apex, the suture throughout depressed, flattened and squamulose, a fine sutural margin glabrous but not elevated; depressed areas closely, very finely punctate, the yellow squamiform setæ very small but distinct; abdomen smooth, extremely minutely and remotely punctulate and with excessively minute slender and depressed pale hairs. Length (♂) 13.5 mm.; width 5.7 mm. Mexico (Federal District—San Aug.),—H. F. Wickham.....***abstrusa** n. sp.

Form much stouter and decidedly ventricose, dark piceous to blackish in color, subopaque, the elytral lines more shining, especially in the male, where they are strongly but unevenly geminate; head very feebly and broadly impressed transversely, not coarsely but rather closely punctate, each puncture with a small yellowish hair; prothorax but slightly wider than long, the width never more than a third greater than the length, the apex much narrower than the base, moderately sinuate, the angles blunt at tip; sides broadly, subevenly arcuate, gradually sinuate basally, the basal angles strongly, obliquely everted and prominently acute; base broadly bisinuate; surface not very convex, very densely, confluent and rather coarsely punctate, with a feebly defined impunctate line basally, and, on each side of the middle, two smooth and inconstant spots, the posterior oblique, the anterior rounded, the punctures medially coarser toward base; sides narrowly and feebly reflexed, thickened; hairs minute, pale; elytra but little longer than wide, obtuse and moderately declivous behind, the sides arcuate, a fourth (♂) to nearly two-fifths (♀) wider than the prothorax, very moderately convex, sloping evenly toward the base throughout the width, the three feeble ridges, the two inner of which are unevenly geminate, joined transversely by irregular lines, the depressions with minute and rather stout pale hairs; abdomen smooth, very finely punctate

posteriorly and having very sparse and extremely minute thin yellowish hairs. Length (σ^7 , φ) 15.0–17.0 mm.; width 8.2–9.6 mm. Mexico (Promontorio, in the Sierra San Francisco, Durango—altitude 2400 metres).....**evertissima* n. sp.

Abstrusa closely resembles *suturalis* Champ., but appears to be narrower, more parallel and more depressed, having the elytral base not obviously wider than the prothorax—though the original description of *suturalis* may be drawn from the female. The prothorax, also, is evidently shorter and more transverse, with less rounded sides and the sides of the elytra are less rounded, the surface laterally without any definite transverse wrinkles. On each side of the median line of the pronotum in the type of *abstrusa*, and just before the middle, there is a small and shallow but distinct rounded indentation, not connected in any way with the small embossed smooth spots; no allusion is made to these indentations in the description of *suturalis*, and it is of course possible that they may be spurious. On the whole *abstrusa* is, however, so closely related to *suturalis* that it may prove to be not fully distinct. The fifteen examples of *evertissima* in my cabinet indicate a species allied to *geminata* Champ., but agreeing scarcely at all with the figure of that species given on the plate, the prothorax being very much more elongate and relatively larger in both sexes; the elytra, moreover, do not slope obliquely toward the humeri and the pronotum has, besides the oblique smooth spot at each side of the middle, another rounded and more anterior; these spots are rather inconstant in extent. The minute hairs of *evertissima* could not be termed scaly, although sometimes very coarse. *Intricata*, of Champion, would also without much doubt belong to *Notiasida*, were it not for the statement that the prosternal process is subhorizontally produced, the mesosternum being somewhat excavated for its reception, which would seem to militate against such an assignment.

Parasida n. gen.

The general form and anatomical features of the body in this genus are nearly as in *Notiasida*, but the elytral structure is quite different, the costæ usually having the form of thin acute and very regular carinæ, becoming lower and more obtuse though still regular in some forms, such as *laticollis* and *planatula*; the outer costa shows no tendency to join the side margin as it does in *Eu-*

schides and subsequent genera of the table. The last joint of the male maxillary palpi is scalene and much larger than in the female, conforming to the *Pelecyphorus* type, the labrum having the usual small deep median sinus at apex, the antennæ moderately developed, slightly enlarged subapically from the base of the ninth joint, the eyes very short, almost five times as wide as long, with the anterior margin subsinuate, the mentum small, obtrapezoidal, separated from the sides of the buccal opening, the gular support moderately high and the ligula unusually small though tumid and non-retractile. The prosternum is rapidly convex and deflexed posteriorly, becoming vertical at the hind margin, the legs rather short and slender, the tarsi with short spinules beneath, the anterior tibiæ only minutely everted and acute externally at tip and the trochantin is well developed. The body is moderately large to small in size, generally opaque and with very varied vestiture of short squamules; in *bibasalis* it is wholly glabrous, except the dense tomentum at the thoracic and elytral bases. The species are rather numerous and widely diffused from southern Arizona to southern Mexico; those represented in my collection may be described as follows:

- Elytra each with three discal carinæ.....2
 Elytra each with two discal carinæ, the inner of the usual three obsolete.....7
 2—Basal margin of the pronotum with a dense fringe of tomentum....3
 Basal margin without a fringe of tomentum, at least sufficiently extensive or dense to be noticeable.....4
 3—Form oblong-oval, rather depressed, opaque, piceous-brown in color; head feebly tri-impressed, finely, sparsely punctate and with short stiff yellow hairs; prothorax three-fifths wider than the median length, widest slightly behind the middle, the apex distinctly narrower than the base, deeply, circularly sinuate, the angles acute, not blunt at tip; sides very evenly, moderately arcuate from apex to base, the latter broadly, deeply bisinuate, the angles strongly projecting posteriorly inside of the reflexed elytral humeri and acute; surface rather feebly convex, coarsely, densely but unevenly punctate, with some small vacant patches and a slightly embossed narrow subinterrupted median line, becoming rather gradually and broadly concave and reflexed, and still more coarsely, very densely punctate laterally, the edge rather thick but even, each puncture with a small subdecumbent, very coarse and distinct yellow hair; basal margin thick and truncate vertically toward the middle and clothed very densely with yellow pubescence; elytra scarcely one-half longer than wide, barely a fourth wider than the prothorax, obliquely

and gradually subacute in posterior two-fifths, the apical lobe not differentiated, widest at the middle, the sides arcuate though very feebly converging basally; surface of each with three thin carinæ, the first from base for three-fifths, the second from base straight and parallel to the first to beyond three-fifths, then curving inward slightly and thence parallel and straight to apical sixth, the outer beginning abruptly at basal fifth or sixth, parallel to the arcuate side margin to apical fifth, the side margin finely cariniform, slightly reflexed, extending to the end of the second carina, becoming strongly reflexed at the distinct but bluntly rounded humeri, the suture also finely elevated; interspaces flat, densely opaque, sculptureless, each with a single median series of moderate perforate punctures, and, toward the carinæ, clothed rather densely with coarse subdecumbent yellow hairs which are directed obliquely outward; abdomen rather shining, somewhat finely, closely, subasperately punctate. Length (♂) 11.0 mm.; width 5.0 mm. Arizona (Huachuca Mts.).

laciniata n. sp.

Form oblong-oval, stouter and much larger, black, opaque, the punctures of the anterior parts and under surface each with a very minute hair, the elytra completely glabrous, except on the basal slope, which is clothed densely with pale hairs, the basal margin of the pronotum also densely clothed with similar hairs, in both cases except at the sides; head moderately impressed, somewhat coarsely, densely punctate basally but feebly and sparsely so anteriorly; antennæ rather short and stout; prothorax one-half to three-fourths wider than long, the apex evidently narrower than the base, deeply sinuate, the angles rather blunt at tip; sides evenly and moderately arcuate throughout, rather more strongly anteriorly, the basal angles acute and posteriorly prolonged within the reflexed humeri; base truncate, deeply sinuate at each side; surface very feebly convex, gradually tumid toward the smooth elevated subcariniform median line and with a large rounded pit, deep to evanescent, at each side of the keel at or just before the middle, the sides gradually rather broadly concave; punctures coarse but very unequal and irregular, very coarse and confluent near the keel, smaller and sparser thence to the sides, with large irregular smooth patches, somewhat transversely rugulose near the edges, which are even though thick, punctate; scutellum small; elytra moderately convex, gradually pointed and moderately declivous behind, a third to slightly more longer than wide, a fourth or less wider than the prothorax, the carinæ thin and strongly elevated, slightly shining, disposed as in *laciniata*, the intervals smooth, very opaque, with very minute remote punctulation and a more regular series of more distinct punctures near the cariniform sutural edges; humeri strongly reflexed; abdomen closely but not deeply punctate and finely, transversely subrugose. Length (♂, ♀) 15.5–18.0 mm.; width 7.3–8.8 mm. Mexico (Promontorio, Durango—elevation 2400 metres).

**bibasalis* n. sp.

4—Third elytral carina basally abbreviated as in the preceding species. .5

Third elytral carina apparently attaining the base or very nearly. . . . 6

5—Form oblong-elongate, parallel, almost flat above, black, subopaque, densely clothed with pale yellowish-brown squamules, hair-like and less appressed on the anterior parts and very fine and sparser on the under surface; head very broadly and feebly impressed and with a pit at the middle of the vertex, closely, not deeply or very coarsely punctate; antennæ moderate in length, rather stout; prothorax almost three-fourths wider than long, about as wide as the elytra, the apex very much narrower than the base, deeply sinuate, the angles broadly rounded; sides slightly diverging from apex to base and feebly, subevenly arcuate, rounding in at base, the angles produced posteriorly over the humeri but very obtuse and rounded, lobiform; base broadly, rather strongly sinuate laterally, truncate and with slightly more concentrated hairs medially; surface nearly flat, broadly, feebly concave laterally, not coarsely, very densely and confluent punctate throughout, without more than a partial and feeble trace of a smooth median line, with one or two small smooth spots at each side, the lateral edges very even but thick and blunt; scutellum large, transverse, triangular, somewhat concave, closely and strongly punctate, with the median line narrowly cariniform; elytra three-fifths longer than wide, at base scarcely perceptibly wider than the thoracic base, the sides nearly straight and feebly converging from the base for fully two-thirds, there more rapidly rounding, the apex gradually pointed and feebly declivous; surface nearly flat, the inner ridge and suture very feeble and broadly obtuse, the others also slight in elevation and obtusely blunt but distinct, the third basally abbreviated as in the preceding, the marginal ridge strong but not much more reflexed basally, all the ridges opaque and but little less closely squamulose; intervals very densely squamose almost throughout but with a line of sparser, more erect and more hair-like and setiform squamules along the middle of each, the sculpture fine and very dense; abdomen smooth, very minutely, feebly and rather sparsely punctulate, more closely so posteriorly; legs slender, with fine and pale close-set hairs. Length (♂) 16.0 mm.; width 7.5 mm. Mexico (La Borrega, Durango) **planatula* n. sp.

Form stouter and much more convex, parallel, deep black, generally with a loose earthy incrustation, the setæ larger but darker in color, becoming pale only along each side of the deep intercostal elytral depressions; head impressed, densely punctate and scabrous, the stiff setæ evident, suberect; prothorax two-thirds wider than long, fully as wide as the elytra, parallel, with very evenly rounded sides from the tips of the feebly produced and broadly blunt apical, to the tips of the moderately prolonged and bluntly acute posterior, angles, the base deeply sinuate at each side, much wider than the apex; surface broadly, feebly convex, coarsely, very densely and confluent punctate, with a narrow partial median line and about two small spots at each side embossed and smooth, gradually rather narrowly explanate but not very differently sculptured along the

sides, which are rather thick; scutellum similar but more sunken, carinate; elytra three-fifths longer than wide, widest at the middle, parallel, with very broadly, evenly arcuate sides, rapidly evenly ogival posteriorly, the humeri somewhat prominent and nearly right through rounded; surface with three narrow, strongly and abruptly elevated costæ, the sutural and lateral margins also elevated, the first and second costæ coalescent at the middle of the basal margin and also at the summit of the convex declivity, the combined ridge joining the lateral margin nearer the apex, the third costa joining the lateral margin near the base, or tending thereto, its posterior end free; depressed intervals finely, densely rugose and opaque; abdomen with rather strong though sparse punctures. Length (♂) 15.0 mm.; width 6.8 mm. Mexico (Toluca),—H. F. Wickham.

**tolucana* n. sp.

- 6—Body in great part similar in form to *laciniata* but rather stout, black, opaque, very moderately convex and with short flavate pubescence; prothorax one-half wider than long, narrowed anteriorly, the sides rounded, incrassate and reflexed, the apical angles acute; base truncate, the hind angles "nearly right"; surface unequal, densely punctate, narrowly carinate medially; elytra wider than the prothorax, posteriorly declivous and acuminate, the margin extending to the tip; suture and three costæ on each, the inner extending two-thirds and the others three-fourths from the base acutely elevated. Length 15.0 mm. San Diego trip,—(probably from some point on the southern boundary of Arizona). [*Euschides liratus* Lec.].

lirata Lec.

- 7—Body sparsely pubescent, sordid black; prothorax slightly shorter than wide, rather flat, the sides broadly rounded and narrowly reflexed, with the [posterior] angles acute, not at all densely punctate; elytra elongate-oval, sparsely punctate, the lateral margin serrulate, this as well as two discal costæ on each, the internal of which is entire, the outer abbreviated at each end, acutely elevated. Length 12.5 mm. Lower California (Cape San Lucas). [*Pelocyphorus sexcostatus* Lec.].....*sexcostata* Lec.

Lirata and *sexcostata* are still apparently represented by the original unique examples, the former taken, I believe, by the Mexican Boundary Expedition, being, as figured by Horn (Rev. Ten. — plate), a species much larger and stouter than *laciniata* and without indication of the basal abbreviation of the outer discal carina so prevalent throughout the genus. The single row of perforate punctures along each of the intercarinal spaces in *laciniata*, and the dense basal pronotal fringe of pubiform tomentum are remarkable characters in that species, the latter still more developed in the Mexican *bibasalis*, and, if they were at all obvious in *lirata*, would undoubtedly have been alluded to by LeConte. There is

seemingly but little doubt that *sexcostata* is properly a member of this genus, although no mention of an inner elytral carina is made by either LeConte or Horn; but, in the figure given by the latter author (l. c.), there is a distinct indication of this carina in a vestigial stage depicted by the artist.

Besides the species described in the above table, the genus *Parasida* will include the Mexican *Asida scutellaris*, *fallax*, *laticollis*, *favosa*, *similata* and possibly *dissimilis*, all of Champion, some of which were subsequently reduced to the status of subspecies by their author, though probably too hastily in most instances. *Planatula* differs from *laticollis* in its depressed and nearly flat upper surface, in the rounded or lobiform hind angles of the prothorax, in the deep lateral sinuses of the base, in the low and obtuse elytral ridges and scarcely elevated suture. *Tolucana* is allied rather closely to *scutellaris* but differs in having the sides of the prothorax not sinuate but rounded basally and in its deeply, rather coarsely and closely punctate intercarinal surfaces of the elytra, with an occasional large deep puncture or irregular tubercle; the brown squamæ are only present in a narrow line adjoining each costa, the median part of each interval being broadly subglabrous. *Parasida* is one of the larger and more characteristic of the Mexican genera.

Euschides Lec.

The genus *Euschides* is by far the largest minor division of the Asidini inhabiting North America and its species exhibit great diversity of outline and sculpture. They are bound together, however, by certain peculiarities of structure, as stated in the table, differing from *Pelecyporus* and allied genera in the thick tumescent, angularly incised and non-retractile ligula, and, from the subsequent genera of the table, all of which possess this feature, they differ in the large scalene terminal joint of the male palpi, more particularly distinguishing the *Pelecyporid* genera. The form of the thoracic base is so singularly constant throughout all this incongruity of form and bodily facies, that it leads me to consider the formation of the bases of the prothorax and elytra as having a great deal of importance taxonomically; the base is broadly, subarcuately lobed, somewhat as in the third group of *Pelecyporus* and a few other genera and less distinctly in *Gonasida*; the basal angles are always

very obtuse but in some species are rendered more evident by reason of a small feeble basal sinus adjoining. The mentum varies somewhat in size, being generally though not always smaller than in *Pelecyphorus* and allies; it is always seated upon a pronounced gular pedestal, is more or less obtrapezoidal and with the usual small median sinus at apex. The eyes are more or less feebly sinuate anteriorly below the middle. The antennæ are nearly of the *Pelecyphorus* type but generally more gradually and feebly enlarged through the two or three penultimate joints. The prosternum is but seldom longitudinally impressed and descends more rapidly upon the anterior margin of the mesosternum, the legs varying in length and thickness, the tarsi moderate, generally narrowly grooved and always having very short erect stiff hairs or spinules beneath, the anterior tibiæ strongly everted and acute or spiniform externally at apex. The body is never very small and is always glabrous or virtually so, except in the *puncticollis* group.

The very numerous species and subspecies may be assigned to the following seven clearly delimitable groups:

- Elytra with an acute marginal carina, or at least a well-marked subacute ridge, through a more or less considerable part of their length; mentum moderate, leaving a rather wide vacant space between its sides and those of the buccal opening; body glabrous, except in the *puncticollis* group. 2
- Elytra without a sharply defined edge or carina at the sides, except generally a very short one at the humeri; mentum generally similar, though sometimes larger as in *crassus*; body completely glabrous throughout. 6
- 2—Body wholly glabrous. 3
- Body with short, sparse and erect hairs, sometimes longer and very distinct on the elytra. 5
- 3—Pronotum with a distinct impression at the middle of the base, involving the basal margin; upper surface of the body very moderately convex to nearly flat, the size always large. Group I
- Pronotum without the narrow impression but frequently having a feeble transverse impression parallel with the margin and separated therefrom by a slight transverse tumidity; upper surface much more convex, the size never so large. 4
- 4—Elytra smooth, or each with three broad and feebly tumid discal ridges, generally feebly sculptured; sides of the prothorax generally rounded but occasionally angulate at the middle. [*Stenomorpha* Sol. (pars)] Group II
- Elytra with two distinct and strongly elevated discal costæ on each and occasionally a third, which latter tends to join the side margin

- near the base, the costæ not cariniform but evidently an extreme development of the obtuse ridges of the preceding group and sometimes taking that form in the present group; body rather small, sometimes extremely slender in the male, always deep black throughout.....Group III
- 5—Pronotum coarsely and densely punctate, sometimes medially impressed at base as in Group I, deplanate or concave and reflexed at the sides; elytra with vestiges of three fine costules on each, the outer of which joins the margin near the base; side margin obsolete, sometimes rather acute and distinct but not cariniform and reflexed, except near the humeri; body very convex.....Group IV
- 6—Elytra widest at or before the middle, more gradually acuminate behind than in any other group, the prothorax rounded or angulate at the sides; body always deep black throughout, very convex; general form of the body strikingly imitative of *Eleodes*....Group V
- Elytra widest well behind the middle, obovoidal, variably convex and diversified in coloration,.....7
- 7—Sides of the very convex prothorax not explanate or reflexed but having a fine cariniform margin; eyes larger than in any other group and less transverse than elsewhere in the tribe so far as observed.

Group VI

Sides of the prothorax, which is always much less convex, concave and reflexed, though more or less narrowly; body generally more or less piceo-rufous, sometimes deep black.....Group VII

These groups are not quite so strongly differentiated as those of *Pelecyphorus*, but, at the same time, are to be considered subgeneric in nature, as the facies is quite distinctive in each and a species can be placed in its proper group without a moment's hesitation.

Group I—Type *marginatus* Lec.

The species of this group are the largest of the genus and are confined to the arid regions of Arizona and western New Mexico, particularly to the southward, where they are numerous and greatly diversified in form and sculpture.

- Elytra with small, sometimes very minute, sparse punctures, the pronotal punctures generally very minute and sparse.....2
- Elytra with coarse, much closer-set punctures, the pronotal punctures rather coarse and dense as a rule.....11
- 2—Marginal carina of the elytra short, never extending materially behind the middle.....3
- Marginal carina long, extending at least to the convex apical declivity..6
- 3—Pronotum laterally rather abruptly deplanate but not at all reflexed and coarsely, closely, transversely rugose.....4
- Pronotum similarly coarsely and closely rugose at the sides but sensibly reflexed. 5
- 4—Body blackish, alutaceous, the elytra dark rufo-piceous; head deeply,

transversely impressed, coarsely, deeply, rather closely punctate, a transverse region between the eyes nearly free from punctures; antennæ stout, nearly as long as the prothorax, notably compressed distally; prothorax large, nearly one-half wider than long, broadly, evenly convex and with small sparse punctures except abruptly at the sides, the basal impression moderate, concave; elytra twice as long as wide, scarcely at all wider than the prothorax, feebly and almost evenly arcuate at the sides, broadly and moderately convex, widest at or slightly behind the middle, the apex obtusely and briefly lobed from above; surface with fine and feeble creases and with rather small, sparse and notably feeble punctures, the side margin from about the middle narrowly reflexed basally; abdomen shining, deep black, not punctate, except moderately toward the tip but everywhere with fine anastomosing creases; legs long, rather slender, the tarsi thick, moderately short. Length (♂) 30.0 mm.; width 12.3 mm. Arizona..... **pollens** n. sp.

A—Similar to the preceding throughout in coloration, lustre and sculpture but notably more abbreviated, with the pronotal impression subobsolete, the elytra about one-half longer than wide, more inflated behind and nearly one-half wider than the prothorax, the acute side margin not extending to the middle, the abdomen with the apical punctures finer and sparser, the legs rather shorter, notably more sparsely sculptured and with the tarsi relatively longer and more slender in both sexes, the antennæ much more slender. Length (♂, ♀) 24.0–27.0 mm.; width 12.3–12.8 mm. Arizona..... **proximus** n. subsp.

Body similar but black throughout, alutaceous, the pronotal punctures still sparser, the elytra (♀) rather more convex, less inflated, more evenly oval, widest at the middle, two-thirds longer than wide, two-fifths wider than the prothorax, the sparse punctures similarly indefinitely impressed and very feeble, the side margins still shorter, extending but little beyond basal third; pronotal impression distinct as in *pollens*; abdomen as in *proximus*, the legs as in *pollens*, except that the tarsi are evidently a little longer and more slender. Length (♀) 27.0 mm.; width 11.7–12.8 mm. Arizona.

brevimargo n. sp.

5—Form more slender, with relatively smaller prothorax than in any of the preceding, rather shining or feebly alutaceous, piceous-black, the elytra piceo-rufous, the under surface and abdomen shining, black; head less deeply impressed, less coarsely and more sparsely punctate; prothorax similar in general form but with the parallel sides evenly, though much less strongly, arcuate, the deeply sinuate apex broader, less markedly narrower than the base, similarly finely, sparsely punctate and broadly, evenly convex, but with the basal impression broader, more feeble and diffuse, transverse and bordering, not involving, the margin, somewhat as in the next group though differing in being at the bottom of a basal declivity and not on the same plane as the surface anterior thereto; surface also with a very vague and feeble impression near each lateral fourth just

behind the middle; elytra fully three-fourths longer than wide, nearly one-half wider than the prothorax, gradually broadening and widest at apical two-fifths, the apex more abruptly, obtusely lobiform from above; surface similarly even, feebly creased, with small, very feebly impressed, rather indefinite and still more remote punctures, the acute lateral margin extending slightly behind the middle; abdomen as in *proximus*; legs moderate, the tarsi rather more slender than usual. Length (♀) 24.0–26.0 mm.; width 11.4–12.0 mm. Arizona (Nogales).....**rusticus** n. sp.

- 6—Elytral punctures extremely minute and sparse, obsolescent and even smaller than the pronotal punctures. Body oblong, rather convex, alutaceous, deep black throughout; head transversely impressed, coarsely, deeply and closely punctate; antennæ rather slender but increasing rapidly in width and strongly compressed distally (♀), stouter and less incrassate distally (♂); prothorax about two-fifths wider than long, the sides rounded and parallel, the general form as usual, the surface broadly convex, very finely, sparsely punctate, moderately reflexed and coarsely, transversely rugose at the sides, the basal impression small and feeble; elytra about two-fifths wider than the prothorax in both sexes, there being very little sexual difference in the body throughout, a very little shorter in the male, two-thirds to three-fourths longer than wide, broadly, evenly convex, sometimes with the sutural regions impressed posteriorly, without trace of costæ or rugæ but with fine irregular creases, the acute lateral margin extending to apical fourth, narrowly but strongly reflexed; abdomen with minute, remote punctures, becoming coarser and closer posteriorly; legs and tarsi rather long and slender, a little longer in the male. Length (♂, ♀) 22.0–25.0 mm.; width 10.6–11.7 mm. Arizona (San Bernardino Ranch, Cochise Co.),—F. H. Snow.....**sponsor** n. sp.

Elytral punctures not coarse but always very distinct, never minute and always much larger than the pronotal punctures. 7

- 7—Side margins of the pronotum deplanate, not reflexed, coarsely and sparsely punctate, only the extreme edges confluent punctate, becoming rugulose posteriorly. Form elongate, very moderately convex, alutaceous, black throughout, the elytra dark piceous; head not coarsely but strongly, sparsely punctate, with unusually long blackish setæ, the punctures wanting in a large median area between the eyes; antennæ well developed, rather stout; prothorax two-fifths wider than long, parallel, the sides broadly arcuate; surface broadly, evenly and rather strongly convex, minutely, sparsely punctate, the side margins relatively rather narrow; basal impression well developed; elytra two-fifths wider than the prothorax, fully three-fourths longer than wide, widest at apical two-fifths, the sides thence feebly converging and but feebly arcuate to the base, rapidly rounding behind, the apical lobe feebly differentiated; surface slightly convex, having stronger sparse punctures intermingled with numerous smaller and irregular ones, also with three extremely vestigial and indefinite costuliform lines on each, the side margin extend-

ing to apical fourth and moderately reflexed; abdomen and legs nearly as in the preceding, the tarsi unusually long and moderately thick. Length (σ^7) 24.0 mm.; width 10.5 mm. Arizona (Huachuca Mts.), **implicans** n. sp.

Side margins of the pronotum either deplanate or reflexed but always strongly, closely and transversely rugose throughout. 8

8—Elytra without discal carinae though sometimes with vestiges thereof, smooth, the punctures sparse and mutually subsimilar throughout. . . 9

Elytra finely closely rugose and punctate, the punctures intermingled with much smaller, very irregular punctuation, each with three very evident discal costules. 10

9—Form elongate, obovate, slightly shining, finely, sparsely punctulate; prothorax quadrate, with the sides rounded and crenulate, the reflexed margin variolate; elytra slightly wider than the prothorax, not very convex, the apex acute, moderately declivous; side margin evanescent before the apex. Length 22.5 mm. Arizona (Gila River). [*Pelecyporus marginatus* Lec.] **marginatus** Lec.

A—Elongate-obovate, very moderately convex, deep black throughout, slightly shining; head coarsely and rather closely punctate; antennae (σ^7) long and thick, rather longer than the prothorax, with joints nine and ten punctured throughout; prothorax fully one-half wider than long, the sides parallel, strongly, evenly arcuate, very finely and feebly crenulate, the surface broadly and distinctly convex, finely but distinctly, sparsely punctate, the side margins deplanate, not reflexed; basal pit moderate, broadly impressed; elytra three-fourths longer than wide, widest at two-fifths from the tip, the sides feebly converging thence basally and but very slightly arcuate, rounded behind, the apical lobe broad and moderately distinct; surface simply with sparse and very distinct punctures, even, except that a distinct carinule diverges from the acute margin at basal fourth, becoming gradually obsolete on the declivity, the lateral margin ending abruptly at apical fifth; abdomen minutely, sparsely punctulate, distinctly and more closely punctate apically; legs long, the tarsi long and rather stout. Length (σ^7 , ♀) 24.0–25.7 mm.; width 10.2–11.8 mm. Three specimens, without indication of locality. **duplicans** n. subsp.

B—Rather shining, similar in its very feeble convexity throughout but relatively narrower and more elongate, black above and beneath, the elytra dark rufo-piceous; head similarly coarsely, rather sparsely punctate but somewhat more sharply impressed transversely, the vertex also more impressed medially; antennae longer than the prothorax, the latter relatively much smaller than in the preceding and about a fifth wider than long, the transversely rugose reflexed side margins narrower, the sides much less and feebly arcuate; surface with the sparse punctures much less small than in the preceding, rather large for this section, somewhat indefinitely and moderately impressed; elytra about twice as long as wide, a third wider than the prothorax, widest but little behind the middle, the large apical lobe as in *duplicans*, the surface with

sparse punctures, which are a third as wide as the length of the scutellum, very large for this section but very feebly impressed and somewhat ill-defined, without carinules except the one very near the margin joining the latter near basal fourth, which is however much feebler and more disintegrated than in *duplicans*; abdomen nearly similar; tarsi long. Length (♂) 25.0 mm.; width 10.5 mm. California (Yuma, San Diego Co.).

esuriens n. subsp.

Form nearly as in *duplicans* (♀) but notably more convex and rather strongly shining, black, the elytra rufo-piceous; head similarly coarsely, loosely punctate; antennæ nearly similar; prothorax similar in size and outline but not evenly, moderately convex transversely as in *duplicans* but, on posterior profile view, more strongly and parabolically convex, the small sparse punctures a little larger and the extremely minute punctulation of the interspaces more evident; side margins broader and deplanate; basal impression narrower and deeper; elytra (♀) not quite one-half wider than the prothorax, less elongate, much more convex, more oval or with more rounded sides than in the two preceding and with the apical lobe narrower, more prominent and more abruptly formed; surface even throughout, more declivous at the sides, without trace of the submarginal carinule, the lateral margin similar; legs long and slender. Length (♀) 26.0 mm.; width 12.0 mm. Arizona (Nogales)... **procurrens** n. sp.

Form much more strongly obovate, the head and prothorax relatively less developed, deep black throughout and shining; head with the usual strong separated punctures; prothorax scarcely more than a third wider than long, evenly convex transversely, finely, sparsely, often evanescently punctate; sides not broadly but strongly reflexed, the basal impression very feeble and transversely diffuse; elytra two-thirds longer than wide, widest well behind the middle, the sides rather strongly converging and broadly rounded thence to the base, obtuse posteriorly, with the apical lobe rather abrupt and moderate; surface convex laterally, rather flattened or impressed suturally, smooth, with a few coarse creases, the punctures sparse, rather strong, each with two fine and vestigial costules and another along and close to the suture, which is flexed outwardly basally joining the first costule at the basal margin; first and second costules, the latter almost obsolete, joining each other posteriorly; lateral margins fine but strong, ending abruptly near apical fourth; abdomen and legs as usual, the tarsi rather more slender. Length (♀) 23.7–27.0 mm.; width 11.2–12.6 mm. Arizona (Huachuca Mts.)

caliginosus n. sp.

Form very stout and ventricose, somewhat as in the preceding but much more abbreviated, deep black throughout and shining; head broadly and moderately impressed transversely, deeply, rather coarsely and sparsely punctate; antennæ long and well developed, stout as usual; prothorax transverse, nearly one-half wider than long, the subparallel sides evenly, rather strongly arcuate; apex much narrower than the base and deeply, circularly sinuate, the angles rather blunt; surface

much more convex than in the preceding, distinctly alutaceous, sparsely, very finely punctate, rather abruptly but not very widely deplanate and transversely rugose at the sides, the plane just visibly inclined upward, the edge moderately thick and uneven; elytra two-fifths longer than wide, three-fifths or more wider than the prothorax, widest at three-fifths, the sides arcuate throughout, rapidly rounding in posteriorly, the apical lobe relatively rather small; surface very even throughout, without trace of costuliform lines, more strongly convex and more steeply declivous at the sides posteriorly than in *caliginosus* and quite evidently impressed along the suture except basally and apically, very strongly shining, only very finely and sparsely creased, the punctures small, very sparse though rather deep and distinctly defined; lateral reflexed carina ending abruptly at apical fifth; abdomen polished, very minutely, remotely punctulate; legs slender; tarsi short. Length (♀) 23.0 mm.; width 12.2 mm. Arizona (Baboquivari Mts.).

satiatius n. sp.

- 10—Form moderately stout, decidedly convex, black, the entire elytra dark red-brown; head impressed, strongly but sparsely punctate; prothorax large, a third to two-fifths wider than long, three-fourths (♂) to three-fifths (♀) as wide as the elytra, parallel and very moderately arcuate at the sides, shining, subalutaceous, strongly convex, minutely and sparsely punctate, the sides reflexed and coarsely, transversely rugose; basal impression rather transverse, well marked; elytra two-thirds longer than wide, more oval and rounded at the sides in the female, widest behind the middle, the apical lobe short but evident, obtuse; surface strongly, evenly convex transversely, closely rugose and not or but feebly shining, each with three low obtuse discal costæ, the outer joining the margin at basal fourth or fifth, the first and second approximate at base, uniting on the declivity, the single feeble line then joined by the third ridge; sutural margin also subsimilarly elevated, nearly smooth, diverging from the suture basally and joining the first costa at the basal margin; intervals elevated, more or less along their median lines, sometimes forming broader and feebler costæ; side margin ending at apical fifth; abdomen finely, sparsely punctate and also with extremely minute, close-set punctulation; legs moderate, the tarsi shorter in the female as usual. Length (♂, ♀) 23.0–24.0 mm.; width 11.0 mm. Arizona (Peach Springs).—H. F. Wickham.....*rugatus* n. sp.

- 11—Elytra very roughly, coarsely and densely punctato-rugose. Moderately ventricose and flattened above, dark piceous-brown throughout; head rather feebly impressed, coarsely, deeply, rather closely punctate; prothorax dull in lustre, two-thirds as wide as the elytra in both sexes, two-fifths wider than long, broadly and moderately convex, coarsely, deeply, closely but unevenly punctate, with a very feeble and obsolete impression at each lateral fourth just behind the middle, the basal impression deep and distinct; sides parallel, moderately arcuate and reflexed, coarsely, transversely rugose, the edges finely, irregularly crenulate; elytra faintly shining, widest

behind the middle, rather strongly narrowing with moderately arcuate sides thence to the base, two-thirds longer than wide, the sides rapidly rounding behind, the apical lobe distinct; surface very feebly convex, with distinct indication of three fine raised lines on each, the side margins sometimes extending almost to the apex; abdomen smooth and shining, minutely, remotely punctulate, the legs and tarsi moderate. Length (♂) 22.5-23.0, (♀) 24.5-26.0 mm.; width (♂) 10.2-10.6, (♀) 12.2-12.7 mm. Arizona (Oak Creek Canyon),—F. H. SNOW.....**rudis** n. sp.

Elytra with the very coarse punctures isolated for the most part, the interstices smooth or nearly so.....12

12—Elytra much depressed, nearly flat. Black, prothorax twice as wide as long [!], slightly convex, [moderately coarsely], sparsely punctate, the sides [distinctly] rounded and confluent rugose, broadly depressed; posterior angles obtuse, not at all rounded; elytra ovate, slightly wider than the prothorax, declivous behind, the surface coarsely punctate and subrugose, without faint costuliform lines, the sides acutely margined; epipleura sparsely, obsoletely punctate. Length 25.0 mm. Camp 7, Mexican Boundary Commission. [*Pelecyphorus rimatus* Lec.].....**rimatus** Lec.

A—Smaller, shining, black, the elytra dark piceo-rufous; head deeply, transversely concave, coarsely, densely punctate, a transverse impunctate area between the eyes; prothorax four-fifths as wide as the elytra, two-fifths wider than long, a little more narrowed apically than basally, the sides evenly, rather strongly rounded; surface moderately coarsely, rather closely but irregularly punctate, convex, with a small feeble impression just behind the middle and another oblique near the base at each side near lateral fourth; margins reflexed, coarsely, transversely rugose, the basal impression distinct; elytra oblong, nearly parallel, with feebly arcuate sides, the apical lobe rather large, abrupt; surface nearly flat, even, except a faint cariniform line near the sides joining the margin near basal fifth, the very coarse punctures everywhere well separated; side margins acute, ending abruptly near apical sixth; under surface shining, the legs moderately long. Length (♂) 21.7 mm.; width 10.5 mm. Arizona (locality unrecorded).

subplanatus n. subsp.

Elytra very distinctly though moderately convex.....13

13—Pronotum without trace of discal impressions; punctures of the head very coarse and dense. Body large, stout, oblong-elongate, rather convex and shining, piceous-black, the elytra paler, rufo-piceous; head deeply, transversely impressed, the impunctate space between the eyes small and irregular; prothorax (♀) nearly four-fifths as wide as the elytra, unusually short, nearly three-fifths wider than long, the deeply sinuate apex much narrower than the base, the sides strongly, evenly rounded; surface evenly, rather strongly convex, very coarsely, deeply, closely and unevenly punctate, the sides deplanate, coarsely, transversely rugose, the basal impression distinct; elytra large, oblong, with subparallel and broadly arcuate

sides, three-fourths longer than wide, the apical lobe large, moderately abrupt; surface convex, less so medially, even throughout though with unusually coarse deep and close-set punctures, partially confluent here and there, the side margins not much reflexed, abruptly ending at apical fifth; under surface deep black and shining; epipleura coarsely, loosely punctate, the abdomen smooth, with fine anastomosing creases. Length (♀) 27.0 mm.; width 12.4 mm.

New Mexico,—Schaupp.....**cribratus** n. sp.

Pronotum with two discal impressions; punctures of the head always separated. 14

- 14—Form (♂) elongate-pyriform, very moderately convex, piceous-black, the elytra dark to bright rufous; head moderately impressed, rather coarsely, deeply, irregularly punctate and with irregular impunctate patches; prothorax relatively small, two-fifths wider than long, two-thirds as wide as the elytra, almost as strongly narrowed basally as apically, the sides strongly arcuate, surface alutaceous, with moderately coarse, irregularly somewhat close, deep punctures and with a rather elongate feeble impression at each side at lateral fourth behind the middle, causing the median convexity to be strongest between them, the sides feebly reflexed, transversely rugose, the basal impression strong; elytra two-thirds to three-fourths longer than wide, even, seldom with traces of raised lines, coarsely but not very deeply punctate, the punctures generally well separated but more or less confluent laterally, widest behind the middle, the sides basally converging and broadly arcuate, the margins moderately to feebly reflexed, ending at apical fifth or sixth; under surface shining and darker as a rule, the legs rather stouter than usual and only moderate in length. Length 24.0–26.0 mm.; width 11.5–11.8 mm. New Mexico (locality and collector unrecorded).

subcruentus n. sp.

- Form (♂) more oblong and parallel, more convex, shining throughout, blackish-piceous, the elytra bright red; head nearly similar; prothorax very much larger, nearly as wide as the elytra, one-half wider than long, more broadly and less strongly convex, the rather coarse punctures very irregularly disposed, sometimes leaving large vacant areas, having a small rounded feeble impression at each side rather beyond lateral fourth and slightly behind the middle; sides evenly, moderately arcuate, rather strongly reflexed, densely, transversely vermiculato-rugose, the basal impression distinct and on the basal declivity as usual; elytra suboval, three-fourths longer than wide, evenly convex, but faintly inflated posteriorly, the sides broadly arcuate; surface nearly as in the preceding but with the punctures deeper, the side margins nearly similar; legs moderate, somewhat more slender. Length 24.0 mm.; width 11.0 mm. Arizona (locality unknown).....**semirufus** n. sp.

- Form (♂) unusually narrow, elongate and less convex, alutaceous, deep black throughout above and beneath; head deeply impressed, the transverse impression interrupted medially and with the impression at the middle of the vertex also distinct, the punctures moderately

strong, not dense; antennæ as long as the prothorax, the latter relatively large, fully four-fifths as wide as the elytra, barely a third wider than long, the deeply sinuate apex much narrower than the base; surface broadly, evenly convex, with rather small and feeble, sparse, very irregularly distributed punctures and an irregular feeble impression at each side near basal third and outer fifth; sides moderately and evenly arcuate, unusually narrowly reflexed, very deeply, transversely rugose, the basal impression moderate, transverse; elytra widest near apical third, the sides thence feebly converging and perfectly straight to the rectangular though blunt humeri just behind the thoracic angles, the sides apically rapidly rounding, the lobe moderate, rather short; surface with very indistinct vestiges of the usual three fine costules and with coarse, irregular and rather shallow punctures, usually clearly separated by the strongly alutaceous interspaces; side margins unusually high and thin, ending abruptly at apical fifth or sixth; under surface more shining, the legs long and slender. Length 23.0 mm.; width 10.0 mm. Arizona (Huachuca Mts.).....**directa** n. sp.

Prothorax nearly as in *rimatus*; elytra elongate, strongly rounded on the sides, subcylindrical and with a very short humeral carina; surface smooth, very finely punctate. Desert regions bordering the Gila River, Arizona.....**subcylindricus** Horn

The few characters given above to define *subcylindricus* are all that have been published and are insufficient to enable me to place it very exactly, the name would imply a greater degree of convexity than in any form known to me and the very short humeral carina would appear to be as in the *obovatus* group, but the published figure shows a prothorax unusually large even for the present group, being about as wide as the elytra and wholly unlike *obovatus*; it is evidently a distinct species and not a variety of *marginatus* as originally published. A species described in few words by LeConte, in the remarks after his diagnosis of *Pelecyporus sordidus* (Proc. Acad. Phil., VI, p. 445), under the name *P. subcostatus*, has obovate elytra, dilated gradually for three-fourths of their length, somewhat flattened anteriorly, very declivous and subacute posteriorly, truncate at base, the acute lateral margin extending to about apical fifth, the surface sparsely punctured, each elytron marked with three faint elevated ridges, obsolete at both ends and of which the external is most distinct; under surface and legs as in *sordidus*. This is evidently allied closely to the species above described under the name *caliginosus*, only there it is the inner of the faint costuli-

form lines which is most distinct, the outer being as nearly as possible obsolete; *subcostatus* was defined wholly from the hind body, as the anterior parts were missing in the original type, which was found by the Mexican Boundary Commission.

In *rusticus* of the above table, the small sparse elytral punctures have just a suspicion of lineal arrangement on some parts of the surface. In one example of *brevimargo* there occurs a singular deformity, the right hind leg being but slightly longer than the intermediate, while the left hind leg is very much longer as is normally the case throughout the genus. To the left of the middle of the hind margin of the fourth ventral in the type of *subcruentus*, there is a fine porrect tooth projecting from the margin and bristling with erect setæ. The hind coxæ in this type are unusually narrowly separated, scarcely more than half as widely as the middle coxæ, while in the second specimen, which is also a male and having less elongate, rather less convex and less strongly margined elytra, the hind coxæ are notably more widely separated, only a very little less so than the intermediate; this is one of the most pronounced structural inconsistencies that I have observed, and, if constant, would imply two remarkably distinct species in spite of the general similarity of facies of the only two specimens now at hand.

Group II—Type *blapsoides* Sol.

This group is more properly Mexican and in those regions abounds in species and subspecies; it is however represented in this country by several aberrant species, forming two distinct sections, the first of which as arranged below by its general appearance and, especially, its coarsely and transversely rugose pronotal sides, recalls the *marginatus* group very forcibly; it is however well distinguished by the very convex and more cylindrical elytra.

- Prothorax angulate at the sides medially. 2
 Prothorax regularly and rather strongly rounded at the sides. 3
 2—Body rather narrow and subparallel, deep black throughout and strongly alutaceous; head moderately impressed transversely, strongly, rather sparsely but not very closely punctate, the interspaces with other punctures which are very minute; antennæ well developed, rather longer than the prothorax, bristling with stiff spinules, gradually moderately enlarged and compressed through joints eight to ten; prothorax two-fifths wider than long, fully four-fifths as wide as the elytra, the apex but slightly narrower than the

base and unusually feebly sinuate, the angles but little produced and obtusely rounded; sides parallel, obtusely angulate and slightly rounded distinctly behind the middle, thence about equally converging and straight to apex and base; surface broadly, very moderately convex, rather finely and sparsely but deeply and perforately punctate and with very minute punctules scattered over the interspaces, very feebly, transversely impressed along the base, the basal margin slightly tumid behind the impression; sides rather narrowly and deeply concave, strongly reflexed and deeply, transversely rugose; elytra three-fourths longer than wide, parallel, with broadly and evenly arcuate sides, widest at the middle, the humeri obtuse though scarcely blunt, the apical lobe broad, obtuse and indistinct; surface cylindrically and strongly convex, scarcely more shining, minutely, rather sparsely punctate, finely, transversely creased and each with several longitudinal broadly and feebly concave impressed lines, separated by feeble broad convexities, the subsutural line rather more acutely impressed and evident; side margin acute but not extending much behind the middle, becoming gradually strongly reflexed at the humeri; abdomen shining, minutely, sparsely punctulate; legs and tarsi moderately long and slender. Length (♂) 22.0 mm.; width 9.0 mm. Colorado,—Schaupp. *advena* n. sp.

- 3—Form stout, somewhat oboval, convex, alutaceous above, strongly shining beneath, black or piceous-black, the elytra sometimes nubilously rufescent suturally and basally; head deeply, transversely impressed, rather coarsely, deeply and closely punctate before, more sparsely and less coarsely behind, the impression; antennæ well developed, rather longer than the prothorax (♂); prothorax large, parallel, two-fifths wider than long, three-fourths as wide as the elytra, strongly, evenly rounded at the sides, the apex distinctly narrower than the base, moderately and evenly sinuate, the angles but slightly advanced though acute; surface rather strongly, evenly convex, sometimes with the median line very obsoletely impressed centrally, a transverse and feeble, sometimes medially interrupted impression along the median part of the basal margin and another at each side near basal and lateral fourth, frequently becoming obsolete, the punctures very small but deep, very sparse, the interspaces with some very minute punctules; sides abruptly, deeply concave, strongly reflexed, coarsely punctate to transversely rugose; elytra one-half to three-fifths longer than wide, oblong-oval, with arcuate sides, obtuse posteriorly, the lobe rapidly acuminate; surface convex, becoming vertical at the sides, feebly alutaceous, very minutely, remotely punctate, with short deep subtransverse creases and with longitudinal broadly and feebly impressed furrows separated by broad and feeble convex lines, the sutural region rather depressed; side margin acute, obsolete in nearly apical half, narrowly explanate, becoming finely reflexed basally; abdomen shining, smooth, except the very minute anastomosing creases; legs moderately long, slender. Length (♂, ♀) 19.0–22.0 mm.; width 9.6–11.5 mm. Arizona (Ash Fork),—F. H. Snow. *corrugans* n. sp.

Form narrower, deep black throughout; head much less deeply impressed but with coarser, deep and close-set punctures throughout; antennæ distinctly shorter (σ^7): prothorax much shorter, fully three-fourths wider than long, five-sixths as wide as the elytra, otherwise similar, except that the apex is but little narrower than the base, the surface opaque, with the sparse punctures notably less fine, becoming in fact quite large on the lateral slopes, with the minute punctules less distinct and more remote and without impressions, except the similar very small feeble one on the median line basally; elytra three-fourths longer than wide, similar, except that the strongly convex surface is very highly polished, the sutural region undeepressed and the side margin defined by a broad shallow groove adjoining it above as far as apical fifth, but becoming acute and narrowly reflexed only in about basal three-fifths; punctures similarly extremely minute and sparse; legs slender, slightly shorter; abdomen much more evidently and closely punctulate throughout, the punctures as usual becoming strong posteriorly. Length (σ^7) 18.3 mm.; width 9.2 mm. New Mexico (Magdalena),—F. H. Snow. *severus* n. sp.

Severus differs from *corrugans* in having the head much more coarsely, closely and uniformly punctate, in the shorter, more opaque prothorax, more defined posterior side margins and much more highly polished surface of the elytra and in the narrower form of the body. These species both differ from *blapsoides*, more especially, in the strongly punctured head, deeply grooved and strongly reflexed side margins of the prothorax, in having concave longitudinal lines separated by corresponding convex ridges on the elytra, as well as by the more pronounced side margins of the latter. There are a considerable number of Mexican species besides *blapsoides*, and they occur as far to the southward as southern Mexico; two of them were indicated but not described by Mr. Champion in one of the appendices of the "Biologia."

Group III—Type *costipennis* Lec.

A limited number of comparatively small and slender species, with rather thicker and denser integuments than the preceding, strongly costate elytra, as a rule, and inhabiting a distinctly different zoological region, confined to southern California and the adjacent parts of Arizona, alone constitute this very distinct group, which however, in its degradational forms, may readily be conceived, to lead onward to the *obovatus* series through the *angulatus* group. Elytra with broad and feeble convex ridges separated by very feeble undefined depressions, the suture not elevated. Body moderately

slender, convex, deep black, opaque throughout, the abdomen shining; head feebly impressed, coarsely punctate, densely so anteriorly, sparsely posteriorly, the interspaces with fine scattered punctures; antennæ much shorter than the prothorax, slender; prothorax about one-half wider than long, widest at the middle, three-fourths as wide as the elytra, the sides strongly, evenly rounded, the apex very moderately sinuate, with slightly advanced but rather blunt angles, barely narrower than the base, the latter oblique and broadly, feebly sinuate to the obtuse angles at the sides; surface opaque, moderately convex, with moderately large deep and very dense subasperate punctures, the sides narrowly concavo-explanate, more coarsely and densely punctato-rugose, the edges moderately thick; elytra fully three-fourths longer than wide, evenly oval, with rather strongly arcuate sides, gradually declivous and narrowed behind, the apical lobe large but not strongly defined; basal margin with a small prominent lateral tooth; surface densely opaque and with fine and rather shallow, muricate, very close-set punctures, the side margin acute and distinctly cariniform, though but little elevated, to apical fifth; abdomen with small but coarse and deep anastomosing creases, finely, not densely punctate, more strongly punctate posteriorly; legs rather short, the femora bristling with short sparse fulvous setæ. Length (♀) 17.0 mm.; width 7.5 mm. California (Kern Co.).

spurcans n. sp.

Elytra with very strongly elevated narrow even costæ and strongly cariniform margins, the suture also strongly elevated.....2

Elytra with feebly elevated or vestigial though fine costæ, as well as sutural and lateral margins.....3

2—Lateral edges of the prothorax thin. Form elongate, black, subopaque; prothorax convex, shorter than wide, the sides strongly, more or less evenly rounded, depresso-marginate and rugose, the posterior angles very obtuse; surface evenly, rather densely punctate; elytra [♂] narrower than the prothorax, the suture, margin and three costæ on each strongly elevated, the first and second uniting at about apical sixth, the third beginning at the margin at about basal fourth, ending opposite the confluence of the other two costæ. Length 15.7–20.0 mm. California (Tejon). [*Pelecyporus costipennis* Lec.; *Asida lecontei* Horn].....**costipennis** Lec.

Lateral edges of the prothorax thick and upturned; form more ventricose; elytral punctures closer and more granulose. Form somewhat stout (♀), convex, deep black; head opaque, deeply, transversely impressed, with a rectilinear impression also along the median line and ending between the eyes, the punctures strong but not very coarse or close; prothorax two-fifths or more wider than long, relatively small, barely two-thirds as wide as the elytra, the apex narrower than the base, moderately sinuate, with the angles rather blunt, the sides evenly rounding and subparallel from apex to base, widest at the middle; surface even, broadly and moderately convex, feebly bi-impressed medially at base, strongly alutaceous, strongly, closely punctate, rather abruptly and not widely concave, reflexed and more coarsely,

subrugosely punctate at the sides, the edges unusually thick for the present group; elytra but little wider behind the middle, ovoidal, the sides broadly arcuate, rapidly rounding behind, the apical lobe from above well defined and strong; base very minutely denticulate at the sides, sinuate as usual; surface with the second costa but little more distant from the side margin than from the first costa and with but faint vestiges of a short intermediate costa posteriorly; concave intervals decidedly shining and very evidently, though finely, sparsely and submuricately punctate, also transversely creased; side margin acutely cariniform, obsoletely uniting with the single obsolescent prolongation of the united first and second costæ far down the very steep declivity, and thence proceeding obsoletely to the apical angles; abdomen shining, with very deep anastomosing creases, punctate apically; legs short. Length (♀) 16.8 mm.; width 7.4 mm. California (Kern Co.).....**evanescens** n. sp.

- 3—Form (♂) very slender, the surface much smoother than in *costipennis*; prothorax evenly rounded at the sides, as wide as the elytra, the latter more than twice as long as wide, rather acute at apex, widest near apical third, the costæ of *costipennis* represented by very faint longitudinal ridges; size apparently much smaller than in *costipennis*. California (Tulare Valley, at the base of the hills). [*Asida compressa* Horn].....**compressus** Horn

Form (♂) shorter and notably broader, deep black, highly polished; head strongly, transversely impressed, very slightly alutaceous, having a loose mixture of moderately large and very fine punctures; antennæ nearly as long as the prothorax, with the short stiff setæ dark fulvous in color; prothorax large, one-half wider than long, equal in width to the elytra, subparallel and strongly rounded at the sides, strongly convex, nearly even, with a feeble transverse basal impression medially, narrowly explanate laterally, the surface polished, with not very close-set punctures, which are deep and moderately small mingled with still much smaller ones, becoming coarser but not closer and with the surface alutaceous near the sides; median impunctate line narrow but evident; elytra twice as long as wide, but little broader behind the middle, the sides just visibly converging and feebly arcuate thence to the dentiform sides of the base, the apex from above with a relatively very large and feebly demarcated parabolic lobe; surface polished throughout, feebly, subrugosely creased transversely, extremely minutely, sparsely punctulate, the suture and two costæ on each feebly elevated, the three broadly concave intervals equal, the third without trace of intermediate ridge, the side margin elevated and costiform but obtuse and blunt, becoming coarsely subcrenulate basally; prosternum and propleura with deep and sparse perforate punctures, the abdomen alutaceous, finely, unevenly creased, very finely punctate and extremely minutely, closely punctulate; legs rather long, the tarsi well developed. Length (♂) 17.0 mm.; width 6.6 mm. California,—Morrison.

neutralis n. sp.

The name *costipennis* is preoccupied in *Pelecyporus*, by LeConte

himself, and Dr. Horn, who transferred both species to *Asida*, therefore changed the later one, which belongs to the present group, to *lecontei*; but the name is not preoccupied in *Euschides*, a genus which can never be legitimately united with *Pelecyporus*, and still less appropriately with *Asida* or *Glyptasida*, to which latter genus the original *costipennis* is here assigned; so I have restored LeConte's name, believing that the aphorism "once a synonym, always a synonym" is unreasonable and consequently untenable. It is stated by Horn under *lecontei* (Rev. Ten., p. 286), that some stout females have a third discal costa, but his figure, which is evidently drawn from a male, has the costa very prominently displayed, and, moreover, the description of *costipennis* by LeConte, which is evidently based upon the male, alludes to the third ridge as one of its most conspicuous distinguishing features. The published size of *costipennis* is apparently greater than that of any of the somewhat incongruous examples in my cabinet. The description of *costipennis* in the table is taken from the original by LeConte, with a few additions inferable from the Hornian figure alluded to. *Compressus*, of Horn, was not really described, the only written words being that "the thorax and elytra are much more smooth [than in *costipennis*] and the costæ of the elytra represented by very faint longitudinal ridges," but, as a figure is given of the male which may be assumed to be passably accurate, I have derived most of the characters of the above description from this figure. As the lustre of the upper surface is not mentioned by Dr. Horn, it is assumed to be subopaque as in *costipennis*, otherwise so striking a character as appears in the polished surface of *neutralis* would in all probability have been mentioned. The male of *neutralis* differs however very strikingly in its shorter and broader outline from that of the male *compressus*, as portrayed on the plate.

Group IV—Type *puncticollis* Lec.

This group is more northern than any other, inhabiting the regions from the Columbia River Valley to northwestern Utah. So far as known at present it is composed of but few rare species, of very distinct habitus and distinguished from any others of the genus by having visible pubescence, very short generally and perhaps only distinct on the posterior parts of the elytra, but sometimes becoming

quite conspicuous. They are of stout and very convex, subcylindric form of body, and, in nearly all, the elytra have each three fine feeble and vestigial costules, the outer joining the side margin, as is the rule throughout this genus wherever these costules appear and in accordance with most of the subsequent genera of the tribe here considered.

Pronotum very convex, with a distinct rounded impression at the middle of the base.....2

Pronotum feebly or moderately and more broadly convex, with the median basal impression obsolescent and narrow.....3

2—Sides of the pronotum concave and reflexed; pubescence of the elytra conspicuous posteriorly. Body elongate-oval, very convex and subcylindric, slightly shining and blackish-piceous throughout; head unimpressed, nearly flat, very densely and rather coarsely punctate throughout, the erect hairs rather short; antennæ short (♀), rather compressed; prothorax short and transverse, about four-fifths wider than long, the subparallel sides evenly and rather strongly arcuate; apex much narrower than the base, deeply sinuate, the angles acute or slightly blunt at tip; basal angles moderately obtuse, very distinct by reason of the small but rather deep sinuses of the base adjoining them as in some of the *obovatus* group; surface strongly and evenly convex, with a large basal impression, the bottom of which is longitudinally acute, coarsely, very deeply and densely punctate, with a very fine raised median line, rather abruptly and deeply but not very widely concavo-explanate and similarly punctate at the sides, the reflexed edge very thin; elytra oblong, parallel, with feebly arcuate sides, scarcely perceptibly wider behind the middle, a third wider than the prothorax and between three and four times as long, two-thirds longer than wide, obtuse and very declivous behind, the lobe small and feeble; surface very strongly, evenly cylindro-convex, rather finely but deeply and closely, unevenly punctate, the fulvous hairs erect, fine, rather long, the vestigial costules and side margin very evident, the humeral carinule rather short but strong, unevenly sinuous; abdomen finely rugulose and finely, rather sparsely punctate, somewhat shining; legs very short and slender. Length (♀) 16.5–20.0 mm.; width 7.6–9.2 mm. Oregon.....*crinitus* n. sp.

Sides of the pronotum rather narrowly deplanate, not reflexed; pubescence of the elytra extremely short, only evident, even posteriorly, when viewed tangentially to the surface. Body much shorter, relatively more ventricose, very convex, black or with scarcely piceous tinge; head barely at all impressed, the deep punctures coarse and fine densely intermingled; prothorax relatively much smaller than in *crinitus* and more transverse, nearly twice as wide as long, nearly as in *crinitus* but deplanate and much more coarsely punctate at the sides and with the apical angles still shorter and blunter; basal impression rather smaller, much less conspicuous;

lateral edges similarly thin and with a fringe of short stiff hairs; elytra not more than two-fifths longer than wide, nearly one-half wider than the prothorax, scarcely perceptibly wider behind the middle, the sides subparallel and broadly, subevenly arcuate, rounding rapidly behind, the apex very broadly and obtusely ogival, the apical lobe obsolete; surface very convex, rapidly very steep behind, smooth and even, the fine vestigial lines only just apparent, the punctures small, uneven in size and very close-set; side margin distinct and ridge-like to apical fifth, reflexed and cariniform, with the surface within it concave at the humeri, which are rather obtuse and blunt; abdomen shining, finely, rather closely, asperulately punctate; legs short and very slender, the tarsi short. Length (♂) 18.0 mm.; width 9.0 mm. Oregon..... **puncticollis** Lec.

- 3—Form oblong-oval, very convex, deep black; head moderately impressed, strongly, rather closely but not very coarsely punctate, the interspaces minutely, closely punctulate and dullish, each puncture with a small blackish seta; antennæ nearly as usual; prothorax one-half wider than long, three-fourths as wide as the elytra, the apex narrower than the base, moderately sinuate, with acute angles, the sides evenly and strongly arcuate, the basal angles obtuse but not rounded, free by reason of the small basal sinus bounding them internally; surface evenly convex, feebly impressed transversely along the basal margin, rather coarsely, very deeply, closely and evenly punctate, each puncture with a very small blackish seta, the interspaces dull, very minutely, closely punctulate; sides rather broadly concave, coarsely and confluent, rugosely punctate and strongly reflexed, the edge very thin; elytra scarcely one-half longer than wide, oblong, the parallel sides broadly, evenly rounded, the humeri rather obtusely angulate, the apex very broadly and briefly ogival; surface very convex, rather shining, with many small deep subtransverse creases, becoming deeper rugæ laterally, also with minute sparse asperate punctures, each with three feeble vestigial costæ, the lateral joining the side margin near the base, the margins acute and cariniform but reflexed only basally near the humeri, extending nearly to apical fifth; abdomen very minutely and densely punctato-rugulose and with the usual minute sparse punctures; legs rather slender but unusually short. Length (♂) 15.5 mm.; width 8.4 mm. Utah (Stockton)..... **tetricus** n. sp.

Form very robust, black, opaque; head coarsely punctate; prothorax one-half wider than long, feebly convex, coarsely and densely punctate, confluent so at the sides, which are broadly rounded, the margin moderately broad [reflexed?], anteriorly emarginate with the angles acute, posteriorly feebly rounded, the rounding starting from within the angles and not from the angles themselves, the latter distinct but not prominent; elytra very broadly oval or obovate, very convex, suddenly declivous and very obtuse behind; margin scarcely evident, the humeral angles distinct, not prominent, the base feebly emarginate; surface faintly and obscurely rugose. Length 16.5 mm. Locality not stated. [*Asida consobrina* Horn].

consobrinus Horn

There can be but little doubt that *tetricus* and *consobrinus* are allied, but the fact that the side margins of the elytra are said to be scarcely evident in *consobrinus* and the published figure (Rev. Ten., plate), indicating a much more inflated hind body, with more strongly arcuate sides, coupled with the absence of any allusion to faint elytral costulation, would seem to show that they are distinct, even allowing for the possibility that the figured type of *consobrinus* may be a female. The general facies of these species strongly suggests a still more abbreviated *puncticollis*, but the sides of the less convex pronotum are much more broadly reflexed.

Group V—Type *angulatus* Lec.

The rather numerous species of this group are even more closely confined to the limits of California than those of the *costipennis* group and are more especially peculiar to the coast fauna, extending northward as far as San Francisco Bay. They are distinguishable at once from any of the preceding groups by having no vestige of cariniform side margins of the elytra; although the elytra may be sharply margined occasionally toward base, this margin is never cariniform but due to a simple compression of the flanks and seems to be more especially developed in the male. The group may be divided into two sections, the second of which is more essentially southern, being abundant in the vicinity of San Diego.

Sides of the prothorax subparallel and evenly, rather strongly rounded as in the preceding group.....2

Sides of the prothorax dilated and prominent at or behind the middle, generally bluntly angulate; elytra sometimes having each two or three very feeble fine vestigial costulae.....9

2—Head very finely and sparsely punctured. Black, shining, similar in form to *costipennis* and differing in its very finely and sparsely punctured head and more convex prothorax, which is less margined and scarcely punctured; elytra elongate-oval, the margin broadly rounded [in transverse section], the surface entirely smooth and without trace of costae. Length 15.0–20.0 mm. California (east and west sides of the Tulare Valley, several hundred miles northward of Fort Tejon). [*Asida captiosa* Horn].....**captiosus** Horn

Head punctured as in *costipennis* and related forms, the punctures rather large, deep and conspicuous and usually mingled with very small punctules scattered over the interspaces.....3

3—Smaller species from the middle coast regions.....4

Larger species from the more southern and interior regions of California.5

4—Body moderately slender, convex, deep black; head deeply impressed,

the punctures conspicuous; antennæ as long as the prothorax (♂) or materially shorter (♀); prothorax fully three-fifths wider than long, widest at the middle, the sides strongly arcuate, rather more convergent and straighter basally than apically, the apex broadly, feebly sinuate and generally feebly, angularly prominent at the middle of the sinus, the angles blunt though slightly everted; base about as wide as the apex, the angles very obtuse and somewhat blunt, not bordered internally by a basal sinus; surface broadly, evenly convex, feebly flattened medially at base, rather shining, finely but deeply, sparsely punctate, the sides rather abruptly very narrowly explanate and more coarsely but not densely or rugosely punctate, the edge with a narrow convex bead; elytra as wide as the prothorax (♂) or a little wider (♀), twice as long as wide, widest at the middle, the sides rather distinct and bluntly acute basally, evenly arcuate, the large apical lobe very feebly delimited; ends of the basal margin parallel and slightly tumid but not at all dentiform; surface very convex, sparsely creased, minutely, sparsely punctate, even; abdomen shining, finely creased and minutely punctate; legs only moderate, slender. Length (♂, ♀) 16.0–17.5 mm.; width 6.5–7.0 mm. California (south of San Francisco and at Monterey), —G. W. Dunn.....*maritimus* n. sp.

- A—Similar to the preceding but narrower and still more convex, almost circular in section, the head with the coarse deep punctures very dense and subconfluent before, well separated behind, the impression; prothorax less transverse, barely one-half wider than long, widest slightly behind the middle, the sides broadly rounded and arcuate to the basal angles, which are still more obtuse, rounded and almost obliterated; surface similar but still more abruptly and narrowly concavo-explanate laterally, with finer subcrenulate marginal bead; elytra much more than twice as long as wide, similarly rather shining, even, finely and obsoletely creased and very minutely, remotely punctulate but with the margins basally scarcely so definite; legs and tarsi still shorter. Length (♀) 17.5 mm.; width 6.7 mm. California (south of San Francisco), —G. W. Dunn.....*imulus* n. subsp.

Body very slender, not quite so convex, more highly polished, deep black; head alutaceous, more feebly impressed, the coarse deep punctures rather close-set throughout, the fine ones distinct; prothorax one-half wider than long, the apex very feebly sinuate, with the angles bluntly rounded and not sensibly everted, as wide as the base, which is almost evenly arcuate from side to side, the angles very obtuse though evident; sides parallel, very evenly and strongly arcuate throughout; surface nearly as in *maritimus*, shining, the fine sparse punctures still more perforate and distinct, the sides less narrowly explanate, strongly but not closely punctate, the marginal bead much finer, elytra much more than twice as long as wide, about equal in width to the prothorax, nearly as in *maritimus* but more polished, the side margins basally very much more compressed, being really acute and coarsely, feebly crenulate; abdomen alutaceous, finely,

closely, subimbricately sculptured and finely punctulate, becoming more shining and strongly though not densely punctured posteriorly; legs moderately long, the tarsi well developed. Length (♂) 16.5 mm.; width 5.8 mm. California (Monterey),—G. W. Dunn.

subelegans n. sp.

- 5—Prothorax large, as wide as the elytra or slightly narrower, not or very obsoletely impressed at the middle of the base.....6
 Prothorax relatively smaller, with a large and strong impression at the middle of the base.....8
 6—Prothorax of the female evidently narrower than the elytra. Body moderately slender, alutaceous to subopaque, deep black; head with the coarse punctures strong but rather sparse, the fine ones very evident, the surface transversely impressed, with a connecting impression proceeding thence along the median line to between the eyes; prothorax one-half to three-fifths wider than long, widest at the middle, with strongly, evenly arcuate parallel sides, the feebly sinuate and medially subcuspid apex nearly as wide as the base, with the angles rather blunt and very feebly everted; surface evenly and broadly convex, having very fine sparse punctures with minuter ones sparsely scattered over the interspaces, the sides gradually and narrowly declivous-explanate and more coarsely punctate, the edge beaded and transversely rugose; elytra equal in width to the prothorax, nearly a third wider in the female, widest at the middle, with arcuate sides, the edge becoming very obtusely evident basally and crenate; ends of the basal margin feebly dentate; surface very convex and smooth, very finely, sparsely creased and with excessively minute and remote punctules; abdomen (♂) opaque, extremely minutely, densely punctulate and with fine, sparse punctures or, (♀), more shining, with fine anastomosing and sparser creases and less distinct sparse punctulation; legs moderate. Length (♂, ♀) 17.0–19.5 mm.; width 6.8–8.5 mm. California (Kaweah River, Tulare Co.).....**tularensis** n. sp.
 Prothorax of the female about as wide as the elytra.....7
 7—Form moderately slender, strongly convex, moderately shining, densely alutaceous anteriorly, deep black as usual; head broadly and strongly impressed transversely, strongly, closely impresso-punctate; prothorax two-thirds wider than long, the apex not quite as wide as the base and rather deeply sinuate, the angles subacute, slightly blunt, not at all everted; sides parallel, evenly and strongly arcuate; surface evenly convex, the feeble flattening medially along the basal margin sometimes obsoletely divided by a feeble elevation of the median line, also with a minute feeble circular indentation on each side of the median line before the middle, the punctures extremely minute and rather sparse, the side slopes becoming very gradually and rather broadly deplanate, coarsely and somewhat closely punctate, the edge with a fine even rugulose bead; elytra scarcely wider than the prothorax, a little more than twice as long as wide, widest at the middle, with the sides only moderately arcuate, the ends of the basal margin feebly dentiform, strongly convex, the side margins

becoming rather acute and crenate basally, the surface even, nearly as in *tularensis* but rather more shining and with the creases somewhat less distinct; abdomen with a coarse reticulation of impressed anastomosing creases, the last segment finely, sparsely punctate, becoming rather abruptly coarsely punctato-rugose in about apical third; legs, tarsi and antennæ short. Length (♀) 21.0 mm.; width 8.4 mm. California,—Morrison.....***amplicollis*** n. sp.

Form rather more slender and subcylindric, very convex, deep black, rather shining; head strongly, transversely impressed, the larger punctures well separated, the smaller very conspicuous; prothorax scarcely visibly narrower than the elytra, scarcely more than one-half wider than long, evenly and broadly convex, without impressions, nearly as in *amplicollis* but more shining, less strongly rounded at the sides and with the porrect surface along the sides narrower and much more abruptly formed, the edge rugose but without so clearly defined a beading, the apical angles more bluntly rounded; elytra evidently more than twice as long as wide, widest at the middle, the sides very evenly arcuate throughout, the apical lobe not clearly demarcated, the surface very convex, even, feebly creased, with the reticulations slightly convex, the excessively minute sparse punctules scarcely visible; side margins bluntly prominent and deeply, transversely creased basally; abdomen nearly as in *amplicollis* throughout, the punctures and rugulosity of the apical part of the last segment much less marked; legs evidently longer and stouter, the prosternum and propleura similarly coarsely, sparsely and perforately punctate. Length (♀) 22.5 mm.; width 8.6 mm. California (locality and collector unrecorded).....***integer*** n. sp.

8—Body large and very stout, strongly convex, deep black and very shining throughout; head moderately punctured and impressed, also with a small feeble longitudinal impression on the vertex, and, behind the impression between the eyes, a very small feeble tubercle; prothorax very convex, polished, three-fourths as wide as the elytra, not quite one-half wider than long, the apex evidently narrower than the base, deeply sinuate, the sinus with a broadly obtuse medial projection, the angles acute and not blunt, not at all everted; sides strongly, very evenly arcuate; surface even, very minutely, sparsely punctate, more coarsely but not densely so on the lateral slope and side margins, which are abruptly and extremely narrowly declivexplanate, much less widely so than in any other species of this group, the edge finely, feebly crenulate and narrowly, faintly beaded, basal angles very obtuse though evident because of a very feeble and broadly diffuse sinuation before them; elytra three-fourths longer than wide, much more obliquely and rapidly subacute posteriorly than in the preceding species, widest at the middle, the sides arcuate; ends of the basal margin not at all modified; surface very convex, even, nearly as in *integer* but more polished, the side margins basally rather distinct, very coarsely and deeply creased transversely; abdomen throughout similar; legs rather long and notably thick; prosternum between the coxæ peculiarly and densely rugose, smooth

- and with fine sparse granules along the middle; propleura with the punctures gradually smaller externally. Length (♀) 24.0 mm.; width 11.0 mm. California (probably southern)....**crassus** n. sp.
- 9—Prothorax as usual widest and bluntly angulate at the sides slightly behind the middle.....10
- Prothorax widest near basal third, where the sides are very obtusely prominent and rounded; legs thicker.....11
- 10—Body rather slender (♂) or stout (♀), somewhat shining, deep black; head feebly impressed, sparsely punctate, more densely near the apex of the epistoma; antennæ moderately long, the third joint twice as long as wide or nearly so in both sexes; prothorax three-fifths to two-thirds wider than long, about as wide as the elytra (♂) or not more than three-fourths as wide (♀), very minutely punctulate, the sides bluntly angulate and narrowly rounded slightly behind the middle, the apical angles acute, only very slightly everted, the sides at and near the prominence slightly reflexed and somewhat thickened; elytra a little more (♂) to slightly less (♀) than twice as long as wide, evenly oval, gradually pointed and but moderately declivous behind as usual, rarely with traces of three fine riblets, the surface very convex, even and impunctate, very faintly creased, the sides very obtusely rounded in section throughout; abdomen very finely, closely micro-punctulate, rather sparsely and finely creased, and, toward tip, finely and sparsely punctate; legs long. Length (♂, ♀) 22.6–25.0 mm.; width 8.0–10.0 mm. California (San Diego). [*Pelecyporus angulatus* Lec.]

angulatus Lec.

- Body similar but more elongate and subcylindric, not so shining, the head and antennæ nearly similar, the prothorax not quite so transverse and with the sides behind the middle notably still more narrowly rounded and anguliform, the acute apical angles more everted; elytra (♂) nearly two and one-half times as long as wide, scarcely visibly wider than the prothorax, as in *angulatus* but duller; abdomen more finely and densely sculptured, rather dull, the scattered very minute punctules inconspicuous, the apical punctures fine and sparse; legs still thicker, of about the same length, the tarsi somewhat shorter and very distinctly thicker. Length (♂) 25.0 mm.; width 8.7 mm. Southern California,—Sanford.....**deceptor** n. sp.
- 11—Body (♂) distinctly stouter than in *angulatus*, similarly deep black and rather shining, the head more densely punctate, the punctures similarly of two sizes and finer and sparse on the vertex; antennæ similar but more dilated apically; prothorax less transverse, similar, except that the converging sides anteriorly are still more rounded, the acute apical angles more everted and the minute punctures evidently less sparse; elytra twice as long as wide, nearly as in *angulatus* but a little stouter, barely at all wider than the prothorax and less gradually acute posteriorly; abdomen with the dense minute sculpture stronger, the surface almost opaque; legs and tarsi notably long and still thicker; anterior tarsi shorter, with the three perfoliate intermediate joints much more transverse and more than twice as wide

as long. Length (σ^7) 24.0-25.5 mm.; width 8.8-9.3 mm. California. (The type example bears one of Mr. Dunn's labels, having written upon it in red ink "Rey," which I have understood to mean Monterey,—a rather extreme northern habitat for any of the allies of *angulatus*. The other two specimens are labeled simply "California.").....**gravidipes** n. sp.

Body elongate-oval, black and opaque; head very sparsely punctate; prothorax a third wider than long, rather widely and acutely margined, the surface very feebly convex, sparsely punctured medially, more coarsely and densely at the margin, the sides strongly rounded, subangulate at the middle; apex deeply emarginate, the angles acute and prominent; base bisinuate, the angles obtuse; elytra elongate-oval, without marginal costa or ridge, the humeral angles rounded; surface very faintly subtricostate; prosternum truncate. Length 17.0 mm. California (Owen's Valley). [*Asida luctata* Horn].

luctatus Horn

The elytra in the first section are evidently less convex and in particular more depressed toward the sides basally in the male than in the female, but this character is not at all apparent in the *angulatus* section. *Crassus* is a species altogether isolated in general appearance, with side margins of the prothorax almost as fine and feebly marked as in group VI. *Luctatus* is evidently out of harmony with the rest of the *angulatus* group in several published characters and in all probability will prove to form the type either of a distinct group of *Euschides* or a separate genus. The allusion to a truncate prosternum in *luctatus* is not altogether clear, for, if that part between the coxæ is posteriorly porrect and subhorizontal to the tip, the species would evidently form a separate genus allied to *Stethasida* and be widely out of place here, where it was placed by its author.

Group VI—Type *convexicollis* Lec.

With a form of body strongly resembling, in its smaller prothorax and obovately inflated hind body, the next or *obovatus* group, though markedly more convex, the few species of this group possess two highly distinctive features, the first relating to the side margins of the prothorax, which, instead of being deplanate or concave as in all the preceding groups, are here very fine and extremely narrowly and steeply declivo-subexplanate; the second concerning the eyes, which are notably larger than in any other type of the entire Asidini as yet coming under my observation. The eyes are, as usual,

very convex, narrowing inferiorly and with the oblique lower part of the anterior margin somewhat sinuate; a narrow deep groove, coarser above, borders them anteriorly. The antennæ are rather more slender than usual, gradually dilated distally to the tip of the tenth joint, and are strongly compressed throughout and not alone apically as in most of the preceding groups. The *convexicollis* group is confined apparently to the Rocky Mountain region and slightly to the eastward from Nebraska to northern Mexico.

Prothorax virtually as long as wide. Body black, shining, the convex prothorax obsoletely punctulate, more distinctly at the sides, which are rounded and finely margined, the angles all obtuse, not at all prominent, the base rounded; elytra obovate, much wider than the prothorax, especially in the female, the sides not at all margined, the apex strongly declivous and obtusely acuminate, sparsely punctulate and sparsely, finely rugose. Length 15.8–21.2 mm. [probably including a mixture of allied species and subspecies]. Found at various localities along the southern boundary of New Mexico.

convexicollis Lec.

Prothorax much wider than long. 2

2—Elytra nearly even. Form stout, the hind body inflated, deep black, rather shining, glabrous as usual; head deeply and rather acutely impressed transversely, strongly, rather closely punctate anteriorly, each puncture with a short erect seta, finely and sparsely on the vertex, with the punctures nude, the eyes only moderately convex; antennæ (♀) rather long, as long as the prothorax, strongly compressed; prothorax a little less than two-thirds as wide as the elytra, nearly one-half wider than long, the apex feebly, evenly sinuato-truncate, somewhat narrower than the base, which is strongly and broadly lobed, becoming narrowly and feebly sinuate near the angles, which are obtuse but not blunt and feebly prominent, the apical angles not at all advanced, right and scarcely at all blunt; sides very evenly and moderately arcuate throughout; surface evenly and strongly convex, subopaque, minutely but perforately, sparsely punctulate, the gradually very steep sides becoming strongly but not densely punctate near the feebly cariniform margins; scutellum well developed, broadly triangular; elytra two-thirds longer than wide, widest at three-fifths, oboval, with rather strongly rounding sides, the latter more rapidly rounding behind, the apical lobe small and obtuse; surface even, smooth, broadly, feebly impressed along the suture except basally and at apex, shining, feebly, sparsely, impressedly-creased and minutely, remotely punctulate, the side margins evident as a subacute line to apical fourth, the line very well defined but not cariniform, except very near the basal angles, where it becomes acutely elevated and cariniform and bordered internally by a deep depression; abdomen strongly alutaceous, very minutely, remotely punctulate; legs very slender and rather long, strongly sculptured. Length (♀) 19.0–22.6 mm.; width 9.0–11.6 mm. New Mexico,—Schaupp. *inhabilis* n. sp.

A—Form nearly as in *inhabilis* but less shining and with the elytra picescent; head nearly similar, the eyes more convex; antennæ similar; prothorax not three-fifths as wide as the elytra, almost as in the preceding, widest before the middle but with the base rather narrower than the apex and with the side margin even less defined, obsolescent; elytra nearly three-fourths longer than wide, widest at three-fifths, almost as in *inhabilis* but duller and less convex and with a fine, feebly eroded line, on each, parallel to and at some distance from the suture, the subacute side margin wholly obsolete even basally, the humeral carinule distinct but short, the punctures notably larger, closer, deeper and unequal in size; abdomen rather shining, minutely punctulate; legs shorter, very slender. Length (♀) 20.8 mm.; width 10.3 mm. Kansas. **retusus** n. subsp.

Elytra with more or less evident longitudinal obtuse lines. 3

3—Form elongate-oval, very convex, deep black and highly polished, the anterior parts and abdomen alutaceous; head nearly as in the preceding, deeply and acutely impressed transversely; antennæ scarcely as long as the prothorax, the latter (♂) nearly one-half wider than long and fully two-thirds as wide as the elytra, as in *inhabilis* throughout, except that the sparse punctulation is still more excessively minute, the surface at the sides more shining, the basal margin not at all sinuate near the basal angles, which are very obtuse and blunt as well, not distinct, and that the greatest width is very slightly before the middle and not exactly at the middle as in that species, the sides similarly broadly, subevenly arcuate; the apex, also, is rather more sinuate though very feebly; elytra fully four-fifths longer than wide, evenly oval, widest but little behind the middle, the apical lobe large though feebly defined, the sides evenly arcuate, with the margin rather acutely defined to apical fourth, the ridge at the humeri short but strongly elevated and cariniform; surface very convex, the punctures rather strong, only moderately small and not very sparse, each with three wide irregular impressed lines, the median much the broadest, the wide swollen intervals broadly convex; legs long and very slender. Length (♂) 20.0 mm.; width 8.8 mm. New Mexico (locality unrecorded).

fastigosus n. sp.

Form rather narrow, not quite so convex, similarly deep black and lustrous; head not so sharply impressed, otherwise nearly similar; prothorax nearly similar throughout, less than two-thirds as wide as the elytra, the latter not more than two-thirds longer than wide, moderately convex above, as usual rapidly convex and becoming vertical at the sides, widest at three-fifths, the apical lobe large, short and feebly defined, the sides strongly arcuate, less arcuate and converging from behind the middle to the base, the side margins very narrowly rounded in section but without trace of acuteness at any part, the basal carinule extremely short and confined to the humeral angle itself; surface of each with two rather fine but broadly and feebly elevated vestigial ridges, wholly unlike the broad obtuse ridges of *fastigosus*, polished and smooth, the punctures small but

very distinct, deep and decidedly sparse, varying slightly in size; abdomen rather shining but minutely, closely sculptured; legs very much shorter than in *fastigosus* and still more slender. Length (♂) 18.0 mm.; width 8.2 mm. Nebraska,—Warren Knaus.

globoicollis n. sp.

It is highly probable that the form assigned above as a subspecies of *inhabilis* has in reality somewhat greater weight, but, as there are only three females of both forms at hand, it may be held to be a subspecies for the present. There is some difference in the convexity of the eyes between *inhabilis* and *retusus*, which may be important taxonomically. The difference in the length of the legs between *fastigosus* and *globoicollis* is a very striking character.

Group VII—Type *obovatus* Lec.

The various species, subspecies and perhaps other forms still less advanced in differentiative evolution, here become very numerous and troublesome, both in defining and recognizing from even the most carefully prepared descriptions. Although the outline of the body, with the obovately inflated elytra, is nearly as in the preceding group, the eyes are very short and transverse and the antennæ scarcely compressed except distally, conforming to the usual condition in the genus in these respects, and the body is always notably less convex. The group is abundantly diffused over the southern Rocky Mountain region, extending to the eastward into Kansas and New Mexico. It has never been found in California, so far as known to me. The assumed dichotomous characters in the following table are rather feebler than in any other group of the genus. The male seems to be more abundant than the female as a rule.

Sides of the elytra rounding to straight toward base.....	2
Sides of the elytra broadly sinuate toward base, giving the hind body a somewhat pyriform outline.....	11
2—Large and very stout species, always deep black when mature....	3
Smaller or less dilated species, usually in great part rufo-piceous in color..	4
3—Body deep black, rather dull in lustre throughout; head very feebly impressed near each side of the front, rather strongly but sparsely punctate, with minute punctures intermingled as usual; antennæ well developed; prothorax about two-thirds as wide as the elytra, two-fifths wider than long, moderately convex, with a small and very feeble, medially divided flattening toward the middle of the base, finely, sparsely punctulate, the sides abruptly and distinctly	

though narrowly deplanate, more coarsely punctate and rugose, the edge evenly, rather strongly arcuate throughout, thickened and elevated; apex deeply, evenly sinuate and distinctly narrower than the base, the angles acute, not at all everted; base sinuate near the basal angles, which are obtuse but distinct and posteriorly minutely subprominent; elytra one-half longer than wide, widest at three-fifths, the apical lobe moderate and distinct; sides arcuate, unmarginated except feebly at the basal angles, which are rather acutely prominent; surface convex laterally, broadly impressed suturally, with the feeblest traces of the vestigial riblets, smooth to subrugosely creased, the minute punctures scarcely visible except sometimes on the flanks; abdomen very minutely chagrined, minutely, sparsely punctulate, more distinctly toward apex; legs only moderate in length and very slender. Length (♂, ♀) 20.0–23.0 mm.; width 10.0–11.8 mm. Arizona (regions near Nogales). **vigens** n. sp.

4—Body, and especially the prothorax, strongly, evenly convex, black, the elytra dark piceo-rufous, very shining throughout; head shining, moderately and sparsely punctate, feebly tri-impressed; antennæ rather slender; prothorax fully two-thirds as wide as the elytra (♀) or three-fourths (♂), two-fifths wider than long, the apex narrower than the base, deeply and evenly sinuate, the angles acute but not at all everted, the basal angles very obtuse but distinct, the sides of the base broadly, feebly sinuate; surface strongly declivous and subimpressed medially at base, very minutely, sparsely punctulate, the sides abruptly but narrowly deplanate, strongly but sparsely punctate and less shining, the edge evenly and moderately arcuate, smooth and strongly, abruptly and narrowly elevated; elytra two-thirds longer than wide, moderately dilated posteriorly, more parallel and with straighter sides in the male, widest at three-fifths, shining, strongly, subevenly convex throughout or subimpressed suturally, each with two feeble threads, the inner alone distinct, very unevenly and sparsely creased and with small sparse uneven punctures suturally; humeral carina very short but elevated, the sides rounding to the basal angles; abdomen shining, very smooth, duller and finely punctate posteriorly; legs rather short, very slender. Length (♂, ♀) 18.0–20.0 mm.; width 8.4–10.4 mm. Colorado and Western Kansas. **convexus** Lec.

Body rather strongly convex, the elytra almost evenly so transversely, piceous-black, the elytra brownish-rufous, rather dull in lustre throughout and narrower and more cylindric than in any other of this group; head very feebly impressed transversely, the punctures deep, rather coarse and close-set anteriorly, gradually finer and sparse posteriorly, the antennæ well developed, somewhat slender; prothorax three-fourths as wide as the elytra, nearly as in the preceding but opaque and widest and more strongly rounded at the sides slightly behind the middle, the minute sparse punctures not so small and deeper, the sides less narrowly explanate, the margins narrowly and strongly elevated and punctate; middle of the base rather acutely, longitudinally impressed; elytra moderately obovoidal, fully three-

fourths longer than wide, widest at three-fifths, the converging sides basally feebly arcuate, with a small deep angular nick just behind the basal angles, which are thereby rendered prominent, the basal carinule very short and feeble; surface dull, with the inner vestigial costule forming a rather wide and feebly convex line, the others obsolete, the creases small and rather close, producing feeble rugosity, the punctures rather strong but unequal suturally, the flanks rugose with deep transverse wrinkles; legs very slender. Length (σ^7) 20.0 mm.; width 8.2 mm. Kansas (locality unrecorded).

gracilior n. sp.

Body less convex, the elytra more or less strongly oboval, much less convex or flattened medially, rarely broadly impressed along the suture. 5

5—Prothorax, at least in the male, larger, fully three-fourths as wide as the elytra.....6

Prothorax notably small, sometimes but little more than half as wide as the elytra in either sex.....9

6—Sides of the prothorax rather widely concave for the present group..7

Sides very narrowly concave.....8

7—Form only moderately elongate, rather shining, black or feebly picescent; head rather strongly and narrowly impressed transversely, finely and sparsely punctate, more coarsely and closely along the margins only; prothorax about a third wider than long, the sides parallel, evenly and rather strongly rounded, the apex moderately deeply, subcircularly sinuate, the angles rather blunt; punctures minute and sparse, the sides rather widely and deeply concave, sparsely and distinctly punctate, the strongly elevated edge thin; elytra strongly oboval and posteriorly inflated, the sides strongly rounding to the base, the apical lobe small but evident; surface feebly impressed suturally, rather smooth, creased, only very finely, feebly and sparsely punctulate even suturally, the vestigial costules nearly obsolete; humeral carinule also obsolete; legs moderate in length, very slender. Length (σ^7 , ♀) 18.5–19.0 mm.; width 9.5–10.0 mm. Arizona (locality not recorded). Near the Pima villages on the Gila River,—LeConte.....**obovatus** Lec.

A—Similarly rather stout, opaque, the elytra strongly shining, deep black throughout; head feebly and broadly impressed transversely, with similar rather strong but sparse punctures, the last palpal joint (σ^7) thinner, more than twice as long as wide; prothorax as in *obovatus* but relatively larger and with the apical sinus more transverse at the bottom, the surface much more densely opaque than in the preceding species; elytra much more broadly flat above, more elongate and less rounded in the male, very abruptly convex and becoming vertical at the sides, the small but deep sparse punctures very distinct throughout, becoming gradually a little stronger and uneven in size toward the suture; humeral carina short and very feeble, not elevated but defined by the feeble dorsal concavity within; abdomen shining; legs rather longer than in the preceding but slender. Length (σ^7 , ♀) 18.5–22.0 mm.; width 9.5–10.0 mm. Arizona (San Bernardino Ranch, Cochise Co.).....**nitidipennis** n. subsp.

B—In general outline rather similar to the preceding forms but with the elytra piceous-brown and subopaque, black, anterior parts and more or less piceous under surface feebly alutaceous in lustre; head broadly and feebly impressed transversely, sparsely and not at all coarsely punctate throughout; antennæ long (♂) or much shorter (♀); prothorax as in *obovatus* throughout, the sinuation of the converging sides anteriorly still more perceptible, the sinus at each side of the base much broader and feebler; elytra similar in form but more dilated and much duller, confusedly creased and having each also two or three fine impressed longitudinal lines formed of connected subsinuous creases, smooth externally, having suturally small very feeble punctures; humeral carinule much less abbreviated than in any of the preceding, sharply elevated, laterally feebly sinuate behind the basal angle; legs slender, very much longer in the male than in the female. Length (♂, ♀) 19.0–20.5 mm.; width 9.0–10.2 mm. Arizona (Sta. Rita Mts.,—near the southern boundary).....**gliscans** n. subsp.

8—Body somewhat shorter and more oblong than usual, convex, alutaceous, black, the elytra dark piceous-brown; head strongly impressed transversely, with rather sparse and moderately coarse punctures, becoming very fine basally; antennæ with the third joint unusually long, three to five rapidly and evenly decreasing, the latter one-half longer than wide; prothorax fully two-fifths wider than long, evenly convex and extremely minutely, sparsely punctulate, the parallel sides evenly and rather strongly arcuate, the concave margins narrower than in any other species, with moderately coarse, decidedly sparse punctures; basal angles obtuse and almost obliterated, the adjoining basal sinus subobsolete; elytra barely two-fifths wider than the prothorax, three-fifths longer than wide, parallel and very evenly rounded at the sides to the base as in *gliscans*, more rounding posteriorly, the apical lobe distinct; humeral carinule very short, slightly tortuous; surface feebly impressed along the suture, strongly creased and opaculate, minutely, sparsely punctulate; legs slender. Length (♂) 18.0 mm.; width 8.7 mm. Unlabeled in the Levette collection but probably from southern Arizona....**consuetus** n. sp.

Body only moderately inflated and rather convex posteriorly, with the elytra only feebly flattened medially, feebly shining to rather dull in lustre, black, the elytra dark piceous-brown; head feebly impressed transversely, the punctures rather strong and close anteriorly, sparse but distinct and deep elsewhere; prothorax two-fifths wider than long, the parallel sides moderately rounded, feebly sinuate anteriorly, the surface strongly alutaceous, with the fine sparse punctulation very distinct, gradually or not very abruptly becoming distinctly explanate and coarsely sparsely punctate laterally to the strongly, abruptly elevated and rather thin punctulate edge; basal sinus at each side very broad and feeble; elytra nearly three-fourths longer than wide, in outline somewhat as in *consuetus* but less flattened and not at all impressed suturally, more or less dull in lustre, with numerous irregular creases, sometimes decidedly

- rugulose, especially apically and suturally, where the strong irregular punctures are very conspicuous; inner vestigial costule and sutural margin rather wide and convex, usually very distinct, the two outer lines fine but evident; sides toward base nearly straight, the humeral carinule extremely short and feeble; abdomen shining, feebly wrinkled; legs short and slender, the hind tarsi barely half as long as the tibiae. Length (♀) 20.5–21.0 mm.; width 9.3–9.6 mm. New Mexico,—Schaupp..... **socialis** n. sp.
- 9—Elytra very strongly inflated, but little longer than wide and strongly, broadly impressed along the suture. Body moderately convex, black, alutaceous, the elytra blackish to piceo-rufous; head strongly impressed transversely, moderately strongly and not closely punctate anteriorly; prothorax two-fifths wider than long, but little more than half as wide as the elytra, parallel and rounded at the sides, the latter anteriorly becoming broadly sinuate, the apical angles much produced and very acute; surface minutely, sparsely punctulate, obliquely and approximately bi-impressed at the middle of the base, abruptly and deeply concave and more strongly punctate at the sides, the upturned edge thin; basal angles distinct and not rounded, the basal sinus adjoining very feeble; elytra two-fifths longer than wide, the surface perfectly even, opaque, finely creased and punctulate throughout, the apical lobe small and obtusely projecting; humeral carinule very short and subobsolete in the type, very distinct in another example; abdomen nearly smooth, punctulate posteriorly, the fifth segment punctate and feebly, transversely rugulose, the entire posterior margin of the fourth deeply parabolic; legs very slender. Length (♀) 18.5–19.2 mm.; width 9.7–10.3 mm. Arizona (Huachuca Mts.) **huachucae** n. sp.
- Elytra much less inflated and more elongate as a rule, never impressed suturally or only very feebly and obsoletely so..... 10
- 10—Form moderately inflated, the prothorax transverse, black and rather shining throughout; head feebly bi-impressed, sparsely, rather strongly punctate, the vertex finely, sparsely so and gradually tumescent medially at base; prothorax about one-half wider than long, almost as in *gliscans*, except that the apical angles are not quite so acute, the obtuse basal angles nearly similar, the lateral sinuses of the base much broader and feebler, the concavo-explanate side margins narrower; elytra relatively longer in the male, three-fifths wider than the prothorax and fully one-half longer than wide, the apical lobe similarly moderate in size and distinct, the sides arcuate, the humeral carinule nearly similar, rather short but evident, less broadly flattened and feebly convex medially, the vestigial costules evident; surface decidedly rugose, confusedly, deeply creased and with small sparse punctures, becoming strong and uneven in size suturally; abdomen shining; legs moderately long, very slender. Length (♂, ♀) 18.0–19.5 mm.; width 8.5–9.0 mm. New Mexico (Thornton, Magdalena Mts. and Jemez Springs). Abundant..... **consors** n. sp.
- Form nearly as in *consors* but differing in its piceous-brown elytra,

having the converging sides straight or even indistinctly and very broadly sinuate basally, and not feebly rounding to the base as in that species, black, strongly alutaceous throughout, or with the elytra feebly shining; head and prothorax rather small in size, the former shallowly impressed, the punctures sparse, small and more minute intermingled, becoming closer and rather coarse but still uneven in size anteriorly; antennæ rather short; prothorax about a third wider than long, minutely, sparsely punctulate, with unusually advanced and acute apical angles and parallel and evenly, somewhat strongly arcuate sides, the sides somewhat broadly concave, sparsely and moderately strongly punctate, the basal angles distinct though obtuse; elytra strongly posteriorly inflated, three-fifths (♀) to two-thirds (♂) longer than wide, widest at three-fifths, the sides rounded, the apical lobe narrow and distinct; humeral carina very short, obtusely elevated; surface broadly flattened above, creased, minutely, sparsely and obsoletely punctulate, with a number of fine longitudinal lines formed of more distinct creases usually evident. Length (♂, ♀) 18.8–19.5 mm.; width 8.8–9.7 mm. Arizona (No-gales, Sta. Cruz Co.).....**papagoanus** n. sp.

Form somewhat slender and convex, black and rather shining throughout; head very feebly impressed, more sharply at the inner ends of the oblique sutures, rather strongly but sparsely punctured, more finely posteriorly; antennæ with the subapical joints much less elongate than in *consors*; prothorax a fifth to more than a fourth wider than long, the parallel sides subevenly and rather feebly arcuate, feebly subsinuate near the acute apical angles, the basal nearly as in *gliscans*; surface only moderately convex, strongly alutaceous, minutely, sparsely punctulate, rather gradually decliv-explanate and coarsely punctured narrowly at the sides, the impression and side margin obsolete basally; elytra fully two-thirds or more wider than the prothorax (♂) to twice as wide (♀), two-thirds longer than wide, the sides rounded, moderately converging and less so basally from behind the middle as usual, the surface convex, very feebly and broadly impressed or flattened along the suture, deeply creased and feebly rugulose, shining, finely, sparsely and unevenly punctate and with the vestigial costæ more or less distinct; humeral carinule moderately long and evident, irregularly sinuous; abdomen shining, the legs very slender. Length (♂, ♀) 15.5–18.0 mm.; width 7.2–9.4 mm. Arizona (Peach Springs),—Wickham and Fuchs. Abundant.....**strigosulus** n. sp.

Form still more slender and more convex, black and shining throughout; head alutaceous, broadly and moderately impressed transversely, strongly, more or less sparsely punctate, more closely in the male; prothorax about a fourth wider than long, three-fifths as wide as the elytra, convex, highly polished throughout, with the sparse minute punctulation distinct, the sides moderately rounded, straight anteriorly, the angles acute; basal angles very obtuse but distinct, the basal sinuations broad and moderate; sides rather narrowly and abruptly decliv-explanate and coarsely, sparsely punctate to the

high marginal bead; elytra nearly three-fourths longer than wide, widest only slightly behind the middle, oval, the sides strongly rounded, becoming nearly straight basally, the general form reminding of the preceding section of the group; ends of the basal margin feebly dentiform, the carinule wholly wanting; surface rather shining in both sexes, very closely, deeply creased and rugulose, finely but strongly, sparsely punctate throughout, more coarsely and irregularly toward the suture, the inner vestigial costule feeble; abdomen shining, the legs very slender. Length (σ^7) 18.5 mm.; width 9.0 mm. New Mexico (Magdalena Mts.),—F. H. Snow.

congruens n. sp.

- A—Similar in general form to *congruens* but much more shining and more feebly sculptured, the sides of the elytra becoming almost straight basally, black, the elytra piceous-brown; head rather sharply impressed transversely, coarsely, rather closely punctate, finely and sparsely so on the vertex; antennæ much longer than the prothorax, rufo-piceous distally; prothorax as in *congruens*, except that the coarsely and sparsely punctured sides are much less narrowly and more deeply concavo-explanate and the surface more alutaceous in the male, the marginal bead very thin and high; elytra similar in form, more than one-half wider than the prothorax but very smooth and evenly convex throughout the width, highly polished, with the vestigial costules evident, the punctures very fine and sparse, more evident and unequal suturally, the creases very fine and sparse, the humeral carinule very short and rapidly obsolete though quite evident, the sides of the base scarcely at all prominent; abdomen alutaceous, finely creased, distinctly and rather closely punctured apically; legs very slender. Length (σ^7) 18.5 mm.; width 8.6 mm. Arizona (locality unrecorded).....**lubricus** n. subspp.
- 11—Body rather large and narrow, gradually dilated posteriorly, deep black throughout; head rather shining, feebly impressed transversely, more strongly at the sutures, strongly, not closely and rather unevenly punctate; antennæ longer than the prothorax even in the female; prothorax relatively well developed, nearly one-half wider than long, two-thirds as wide as the elytra, subparallel, evenly and somewhat strongly rounded at the sides, the apical angles but slightly blunt, the basal moderately obtuse, very distinct, the basal sinuses broad and extremely feeble; surface subopaque, moderately convex, minutely, sparsely punctulate, rather abruptly and distinctly concavo-explanate and sparsely and strongly punctate laterally, the edge strongly elevated and thin; elytra about three-fifths longer than wide, widest but little behind the middle, the sides strongly arcuate, becoming strongly convergent and broadly sinuate basally, the apical lobe small, moderately distinct, the humeral carinule wanting, the ends of the basal margin feebly dentiform and prominent; surface strongly shining, broadly flattened or slightly impressed medially, the sutural region narrowly and feebly tumescent, the vestigial costules obsolete, the creases feeble and the punctures

small, sparse and obsolescent externally, more distinct and irregular suturally; abdomen shining, somewhat strongly but finely, confusedly creased; legs moderately long, slender. Length (♀) 22.0 mm.; width 10.2 mm. Kansas.....*facilis* n. sp.

There are many forms in southeastern Arizona allied to *obovatus*, and they are rather confusing, but with prolonged study, begetting more intimate familiarity, the separation of the species and subspecies finally becomes much less uncertain, and in fact, as they are now arranged in my cabinet, there would scarcely seem to be any great amount of error. *Nitidipennis* and *gliscans* probably are species different from *obovatus*. In one of the specimens of *convexus* before me there is a rather notable deformation of the right antenna, in which the outer joints are much shorter than those of the left antenna, the tenth joint being a rounded solid mass which includes the eleventh, the true spongy apex of the tenth being evident only in outer half of the width at about the middle.

Heterasida n. gen.

In general facies and many features of its organization this genus differs very markedly from any of the preceding and is indeed wholly isolated in the Asidini. The antennæ form one exception in the tribe in having the entire periphery of the apex of the tenth joint spongy-pubescent, and the nature or disposition of the vestiture is also to a greater or less degree peculiar. The type of elytral costulation is approached elsewhere only in *Asidina*, so far as noted. In the structure of the head and eyes, labrum, prosternum and some other general characters it does not differ essentially from *Euschides* and many other generic groups, but the fourth palpal joint is not large and scalene in the male but small and recti-triangular, as in all the following genera from this point in the series, and the anterior tibiæ much more nearly resemble those of *Pelecyporus*, differing greatly from *Euschides* in being more cylindric, with the outer angle at apex barely at all everted or acute; the tarsi are spinulo-setose beneath. The mentum is very moderate in size, obtrapezoidal, mounted upon a high gular pedestal and does not quite attain the sides of the buccal opening even anteriorly; the acutely pointed sides of the opening are much prolonged and well developed when compared with some other genera, such as *Glyptasida* and *Pelecyporus*,

where they are very short and obtuse. The few known species may be described as follows:

Hind angles of the prothorax not in the least prominent or acute. Body rather feebly ventricose, deep black, opaque above, rather less so beneath; head broadly, deeply impressed transversely, the impression abruptly terminating at each side in the precipitous straight inner walls of the lateral prominences, the punctures moderate and not dense, the hairs short and very stiff; antennæ rather longer than the head and prothorax, somewhat stout, scarcely at all compressed; prothorax fully as long as wide, the subparallel sides moderately and very evenly arcuate from the basal angles nearly to the apex, where they become sinuate behind the very narrow and anteriorly much produced, acute apical angles; apex deeply sinuate, narrower than the base, the latter broadly, evenly bisinuate, the basal angles right, not blunt and not at all everted; surface strongly gibbous medially, abruptly and very narrowly concave along the margins, which are rather thick and feebly crenulate, the median line narrowly and deeply impressed but only at the summit of the gibbosity, the base not at all impressed; punctures not very fine, strongly asperulate and dense throughout, each with a short and very stiff but simple recurved dark fulvous seta; elytra fully one-half wider than the prothorax, three-fifths longer than wide, widest at the middle, gradually acute behind and moderately declivous, the sides parallel and evenly arcuate to the basal angles, which are obtuse but not blunt, the base transverse, sinuate at and near the rather small scutellum; surface flat or nearly so, with small punctures condensed into regular lines suturally but more dispersed laterally, each puncture bearing a broad recurved piceous scale-like seta, the lateral margin finely but strongly cariniform, abruptly ending near the apex, each having also a strongly cariniform discal costa, beginning behind just above the end of the marginal ridge, gradually approaching the latter anteriorly and fusing gradually with it just before the middle; abdomen strongly, densely, asperately punctate; legs rather short and very slender. Length 16.0 mm.; width 7.0 mm.

Lower California. [*Pelecyphorus bifurcus* Lec.]. **bifurca** Lec.

Hind angles of the prothorax finely acute and strongly everted, very prominent; dorsal ridge of the elytra joining the hind margin, not near the middle as in the preceding, but at base, much less marginal in position 2

2—Body black, opaque, sparsely clothed with short sordid hairs; head and prothorax strongly, densely punctate, the latter longer than wide, moderately and equally narrowed anteriorly and posteriorly, the sides broadly rounded, subcrenate posteriorly, the margin reflexed; anterior angles produced, acute, the posterior acute and diverging; base bisinuate; surface broadly and deeply canaliculate; elytra ovate, obliquely attenuate posteriorly, one-half wider than the prothorax, more finely punctate, the lateral margin and a dorsal costa on each acutely elevated and uniting at the humeri, the

marginal carina extending within a sixth of the tip, the dorsal costa ending near the suture at about a third from the tip; antennæ and legs very long. Length (♂) 10.0 mm. Lower California. [*Pelecyporus connivens* Lec.].....**connivens** Lec.

Body somewhat as in *bifurca* though smaller and much more slender, black, dull and densely coated with earthy matter through which the short stiff and simple bristle-like setæ protrude; head impressed as in *bifurca* but more feebly, the antennæ more slender; prothorax slightly wider than long, the subparallel sides evenly and more strongly arcuate, not sinuate anteriorly, where the angles are less produced anteriorly but acute, the basal angles abruptly and strongly everted and finely acute, very prominent; surface very tumid medially, the tumidity divided longitudinally by the broadly, deeply impressed and entire median line, which narrows toward apex and base, the lateral slopes of the tumidity feebly, longitudinally impressed at lateral fourth of the width, these furrows not quite attaining apex or base; sides more broadly and shallowly concave than in *bifurca*; punctures coarser, dense but not so muricate, the stiff short hairs fulvous; base similar; elytra not at all wider than the prothorax, three-fourths longer than wide, gradually very acute behind the middle, where the sides are arcuate, gradually converging and straighter to the similar basal angles, which, however, are far within the thoracic angles; surface flat, though similarly steeply declivous between the costa and the margin, which is as in *connivens*; suture narrowly elevated in a way not at all noticeable in *bifurca*, the short stiff blackish setæ differing greatly from those of *bifurca* in being simple and not squamiform and in being evenly distributed, abdomen closely perforato-punctate, not at all asperulate; legs relatively longer and much stouter. Length (♂) 9.0 mm.; width 3.4 mm. Lower California (Cape San Lucas),—Chas. Fuchs.

tantilla n. sp.

Body still more slender than in *tantilla*, deep black, not coated with earthy matter, opaque, the elytra slightly shining; head similar though more deeply impressed, the short erect bristles dark; prothorax similar but about as long as wide, the apex very nearly as wide as the base and more deeply sinuate, with the acute angles more anteriorly projecting; sides moderately arcuate, becoming feebly sinuate anteriorly, the basal angles even more obliquely everted and becoming finely spiculiform toward tip; surface similar, the median entire sulcus even broader and deeper, the lateral moderate; side margins more crenulate and without so distinct a fringe of short erect hairs; elytra more elongate, scarcely as wide as the prothorax, nearly twice as long as wide, the ridges as in *tantilla*, the humeri not obtusely angulate as in that species but minutely, denticularly prominent laterally; surface nearly flat, with rather coarse perforate punctures disposed in a few nearly even longitudinal series, the interspaces scarcely at all punctulate but clothed loosely with rather long and closely recurled stiff but nearly simple dark yellow hairs; abdomen more coarsely, very densely cribrate, the punctures simi-

larly simple and perforate, impressed along the middle from the base to the fourth segment, this impression not being visible in *tantilla*; legs and antennæ very much longer than in *tantilla*. Length (σ^7) 10.5 mm.; width 3.8 mm. Lower California (Santa Rosa),—Beyer.
exilis n. sp.

Form and facies somewhat as in *opaca* but with the elytra more narrowed at base and expanded posteriorly, dull, black; elytra with three vittæ of minute granules, each bearing a minute spine-like hair; head moderately coarsely, not densely punctured; prothorax broader than long, slightly narrower in front, the sides feebly arcuate, with a slight sinuation posteriorly, the hind angles acute; surface moderately convex, with faint trace of a median groove, coarsely and closely punctured, more densely at the sides; elytra broadest behind the middle, the humeri distinct but not rectangular, the marginal ridge nearly reaching the apex; surface feebly convex transversely, with three vittæ—one close to the suture,—formed of minute granules, each with a minute hair, a few scattered granules in the interspace next the margin, otherwise quite smooth; prothorax beneath punctate medially, granular at the sides; meso- and sides of the metasternum coarsely granular; abdomen moderately finely, not closely punctate, bearing short hairs; legs roughly punctured. Length 18.0–21.0 mm. Lower California (Pescadero,—west side). [*Asida subvittata* Horn].....*subvittata* Horn

I am quite at a loss to know where to place the *Asida subvittata* of Horn, its *opaca*-like facies, with elytra enlarged posteriorly, feebly punctured abdomen and absence of discal lateral costa on the elytra being incompatible with *Heterasida* proper; but, at the same time, there are some characters which seem to indicate that it may be more fittingly attached to *Heterasida*, provisionally, than to any other genus here defined; among these may be mentioned the feebly impressed median line of the pronotum,—a rather unusual character—and the aggregation of the elytral punctures, which are here granuliform, into clearly defined vittæ, which is one of the notable features of *Heterasida bifurca* and unknown elsewhere among American species. I have but little doubt, however, that *subvittata* really constitutes the type of a distinct generic group peculiar to Lower California.

There are so many important differences between the *bifurca* type and *connivens*, *tantilla* and *exilis*, affecting the entire habitus, sculpture and form of the basal angles of the prothorax, that it is difficult to understand why Dr. Horn should have even suspected

any sexual relationship between *bifurca* and *connivens*.* I also fail to comprehend the reference of them to *Pelecyporus* by LeConte, as the fourth male palpal joint is in no way large and scalene as it is in that genus. My single specimen of *bifurca* described above is not identifiable sexually, but appears from its notably long antennæ to be a male. All of these remarkable species inhabit the regions about Cape San Lucas and a more thorough examination will doubtless disclose more allied species in that neighborhood. I at first considered the type of *tantilla* as representing *connivens*, because it seems to have the same thoracic angles and elytral costæ; but, on more closely reading LeConte's description of *connivens* quoted above in the table, where the elytra are said to be much wider than the prothorax even in the male, it became evident that they are by no means the same. *Tantilla* and *exilis* are among the smallest and by far the slenderest American members of the Asidini, being much more slender than *Pactostoma oblecta*, and *tantilla* is even shorter, being probably subsimilar in dimensions to *Stenosides texanus* Wick.

Asidina n. gen.

The general form in this genus is narrow and parallel, with the dorsal surface flattened, but occasionally it becomes broader and more oval; the integuments are more or less smooth, sparsely and finely punctate, the punctures bearing very short, stiff and simple erect setæ, which are altogether inconspicuous. There is nothing peculiar in the head, labrum, eyes and prosternum, the latter being very steeply declivous or vertical behind, but the antennæ are more or less slender, with the tenth joint wider, betraying an approach to the next genus, from which it differs in the mentum, this being transversely parallelogramic and in close contact at the sides with the sides of the very shallow buccal opening, these lateral projections being as excessively short and obtuse as in *Glyptasida* and *Pelecyporus*; but the gular pedestal is rather long, only moderately wide and is deeply sinuate medially. The legs are moderately short, slender, clothed with very short and stiff hairs, the

* To set this matter finally at rest it may be stated that since this was written I have received a specimen agreeing fairly well with LeConte's description of *connivens* and having the elytra more than one-half wider than the prothorax. It is about 13.0 mm. in length and the protruded sexual organs show clearly that it is a female.

tarsi rather short and with still shorter, stiffer hairs beneath. The anterior tibiæ are as in the *Pelecyphorus* type, cylindric and scarcely at all everted or acute externally at apex in some, to decidedly spini-form in others, this feature being as inconstant as in that genus. In *Euschides* there is much greater uniformity in this respect, the outer angle being invariably much everted and very acute. The species of *Asidina* are few in number, those so far discovered being very readily distinguishable as follows:

- Elytra with the discal costa abbreviated at both ends and parallel to the side margin, the latter not bifurcate behind.....2
 Elytra with the discal costa attaining the base, the marginal carina bifurcate posteriorly.....3
 Elytra without a free discal costa, the latter uniting with the marginal carina anteriorly, the marginal carina not bifurcate posteriorly...4
 2—Body black, opaque, finely, muricately punctate and hispid; prothorax quadrate, the margins reflexed, the apical angles very acute; elytra nearly flat above, scarcely wider than the prothorax, subparallel, the apex strongly declivous, having near the margin an acute costa which is abbreviated at both ends and parallel with the acute marginal carina. Length 15.0 mm. California (in the mountains of the western part of the Colorado Desert). [*Pelecyphorus paralleus* Lec.]..... **parallela** Lec.
 Body very narrow, parallel, pale piceous-brown in color, the integuments throughout very highly polished; head very feebly impressed, opaculate, strongly, closely punctate and hispid with short stiff pale hairs, the sides before the eyes very prominent but obtuse, the antennæ very slender as in most European *Asida*; prothorax about a third wider than long, subparallel, the sides evenly and moderately arcuate throughout, the apex narrower than the base and deeply, evenly sinuate, with the angles only moderately produced, acute and with the apex slightly blunt; base transverse, very feebly and broadly bisinuate, the angles obtuse but distinct; surface very evenly and moderately convex, polished, extremely minutely, sparsely punctulate and hispid with very short hairs, the sides very abruptly and strongly reflexed, almost vertical, thin and coarsely, densely, rugosely punctured; base declivo-impressed along the median lobe, scutellum small, equilatero-triangular, opaque; elytra equal in width to the prothorax, fully three-fourths longer than wide, gradually declivous and obtuse behind, the apical lobe from above small but distinct, the sides parallel and feebly arcuate; basal angles obtuse but distinct; side margins strongly cariniform, still more elevated basally, rounding in rapidly behind nearly to the apex, the discal carina strong, extending from basal fourth nearly to apical sixth, becoming but little more distant from the margin posteriorly; surface strongly shining, flat, sparsely and very minutely punctulate and hispid with short pale yellowish setæ; abdomen finely, closely, asperulately punctate and with close and longer, finer pale hairs,

legs rather short, slender, the outer angle of the anterior tibiæ everted and acutely spiniform. Length (probably ♂) 12.6 mm.; width 4.9 mm. Arizona..... **teres** n. sp.

- 3—Form nearly as in the preceding, subparallel and nearly straight at the sides, the body narrow, slightly larger in size, piceous-black, shining; head more shining, rather deeply, transversely impressed, the punctures strong but rather sparse, the hispid vestiture pale fulvous; antennæ distinctly less slender and darker in color; prothorax much shorter, fully two-fifths wider than long, otherwise nearly as in *teres*, except that the basal angles are more posteriorly prominent, right and not at all blunt, the polished surface minutely, sparsely punctate medially and feebly, finely impressed along the median line but becoming strongly and more closely punctate broadly toward the sides, the latter similar, the thin edge more evidently minutely crenulate, the base at the middle not so impresso-declivous and the stiff hispid vestiture rather longer and darker in color; elytra slightly wider near apical third than across the humeri, which are obtusely and prominently angulate and joined to the ends of the basal margin by a short oblique sinus, barely a fourth wider than the prothorax and three-fourths longer than wide; sides just visibly arcuate, rounding in very rapidly behind, the surface more abruptly and strongly declivous posteriorly, strongly shining, minutely, sparsely, subgranularly punctulate and with the erect hispid hairs rather longer and much darker in color, flat between the discal ridge and the suture, the former very strongly elevated, tending to coalesce posteriorly with the end of the ramus from the marginal carina, which leaves the latter at apical third; abdomen shining, finely and rather sparsely, subgranularly punctate and with much shorter inconspicuous pale hairs; outer angle of the anterior tibia rather everted, very acute, Length (probably ♂) 14.0 mm.; width 6.1 mm. Arizona (Tempe)..... **liberta** n. sp.

Form stouter and much more ventricose, piceous-black and dull or subopaque in lustre, rather more shining beneath; head feebly shining, moderately impressed and strongly, closely punctate, the punctures deeper and more abruptly perforate than in the preceding; antennæ only moderately slender; prothorax transverse, two-fifths wider than long, as in *liberta* throughout but duller, alutaceous and still more strongly and less sparsely punctate, the punctures toward the sides becoming occasionally almost confluent and rugulose, the dark hispid vestiture still closer, the similarly very abruptly and subvertically reflexed sides not quite so wide and the basal angles more obtuse; elytra one-half (♂) to three-fifths (♀) wider than the prothorax, about three-fifths longer than wide, evenly oval, widest at the middle, with strongly arcuate sides, the apex gradually rather steeply declivous but not very obtuse, the apical lobe small and moderately prominent, obtuse; humeri as in *liberta*; surface and vestiture similar but much duller, opaque, the discal costa not so elevated and not tending to unite posteriorly with the ramus, which leaves the marginal carina more anteriorly or but little behind the middle;

minute punctures similarly granuliform; abdomen similarly but more closely punctulate and subpubescent; legs rather short and slender, the anterior tibiæ scarcely at all everted and merely acute externally at apex. Length (σ^7 , φ) 13.5–14.5 mm.; width 6.3–6.9 mm. Arizona (Tuçson),—Wickham. [*Asida wickhami* Horn].

wickhami Horn

- 4—Body black, shining; prothorax variolate, longer than in *Euschides marginatus*, the sides subangulate and reflexed, crenulate; base truncate; elytra impunctate, obovate, the suture elevated, flat above, the sides and apex strongly declivous; surface with a very acute costa, which becomes confluent with the marginal carina anteriorly, and, posteriorly, curves toward the suture. Length 18.7–22.5 mm. California (Colorado Desert). [*Pelecyporus confluens* Lec.].

confluens Lec.

The last species of the table is unknown to me but it appears to be a member of this genus, although confessedly rather aberrant in size and sculpture. The posterior ramus of the marginal carina in *liberta* and *wickhami* is not an inner offset or branch of the carina, but is the inner of two equal branches due to the symmetrical bifurcation of the carina, a rather peculiar structure, not observable elsewhere in the tribe so far as known to me. The *Asida furcata* of Champion, from Durango, Mexico, belongs to this *liberta* group of the genus.

Trichiasida n. gen.

The noticeable distinguishing features of this genus include the more or less pubescent integuments and the moderate or rather small, transverse and obtrapezoidal mentum, mounted upon a long and well developed, deeply sinuate gular peduncle and sometimes leaving much open space between its sides and those of the buccal opening, or in close contact with the latter anteriorly or even dilated anteriorly around their apices as in *horrida*, the sides of the buccal opening always rather short and broadly obtuse; this variability in the form of the mentum within certain limits has been referred to previously under *Euschides*. In addition, the antennæ are pale and very slender as a rule, with the tenth joint abruptly wider, conforming to the usual type in European *Asida*, and the outer angle of the anterior tibiæ is almost invariably everted and acutely spiciform, the outer edge of the tibia in general somewhat serrulate. There may or may not be a prominent elytral margin and the surface, normally, is devoid of cariniform costæ, though generally having feebly tumescent lines, which, in some groups, become more com-

pressed and elevated, giving the appearance of the true costæ of the two preceding genera; this process of transformation from wave-like tumidity to rather acute costuliform ridges may be traced in various stages in different species. The size of the body is greatly diversified, some being among the smallest of the Asidini, while others are of rather more than the average dimensions. The species are rather numerous but rare individually as a rule. Although there is a certain peculiarity of facies common to all of them, even more pronounced in fact than is observable among the various groups of *Euschides*, there is nevertheless such variety that it becomes necessary to define a considerable number of subgeneric groups as follows:

- Elytra not margined; base of the prothorax rectilinearly truncate or very feebly arcuate medially.....2
- Elytra margined, the margin never cariniform though more or less acute or costiform.....3
- 2—Body and legs clothed with long fine erect hairs, the tarsi beneath with shorter stiffer and more fulvous hairs; reflexed sides of the prothorax not attaining the basal angles.....Group I
- Body and legs hispid with short erect or suberect hairs, the tarsi beneath with very short spinuliform and more or less fulvous hairs; reflexed margins of the prothorax attaining and forming the basal angles; body small in size.....Group II
- 3—Base of the prothorax transverse, strongly bidentate medially; reflexed margins of the prothorax attaining and forming the basal angles as in all the following groups; elytra as in the preceding groups, not costate; body larger, very stout, sparsely clothed with long erect hairs, the legs with short hairs, the tarsi beneath with dense stiff fulvous hairs.....Group III
- Base of the prothorax truncate, not modified medially. Elytra each with three costæ, the outer joining the margin near the base; body convex, rather inconspicuously pubescent, the hairs short, the tarsi with short dark spinuliform hairs beneath.....Group IV
- Base of the prothorax broadly and strongly arcuate. Elytra each with three ridges, the inner feeble, the outer joining the margin near the base; body somewhat depressed, the pale vestiture moderate but coarse, erect and hispid, short, inclined and fulvous on the legs and tarsi, a little longer and dense beneath on the latter somewhat as in Groups I and III.....Group V

These groups are in general rather local, although the third, represented by the Mexican *villosa*, is widely diffused from Texas and southern Mexico to Lower California and the second, represented by *acerba*, also occupies a large Sonoran region. It is probable that the Mexican *Stenomorpha subpilosa* Sol., and *Asida pubescens*

and *unicostata*, and possibly *Ologlyptus bicarinatus* of Champion, may also belong to this genus. The *Asida semilævis* of Horn, is appended very doubtfully.

Group I—Type *hirsuta* Lec.

Two rather isolated species alone constitute this group so far as known. The body is moderate in size and clothed almost throughout, as well as on the legs and upper surface of the tarsi, with very long erect flexible hairs of pale ashy color, the under surface of the tarsi having shorter though relatively somewhat long stiff dense and more fulvous hairs. The mentum is transversely obtrapezoidal and very loosely fitted, the antennæ moderately short and very slender, the prothorax rectilinearly truncate at base with obtuse angles, the elytra devoid of any trace of side margin even at base, the legs moderately long, with the tarsi notably short and slender and with unusually long and slender claws, and the outer edge of the anterior tibiæ is not perceptibly serrulate as it is in the next group. The abdomen from base to apex is much longer than all the parts anterior thereto combined.

Body rather narrow, very convex and subcylindric, blackish-brown in color, the integuments highly polished when clean and without microreticulation; vestiture very conspicuous but not dense, cinereous, fine, composed of very long and sparser flying hairs and others of the same general character but shorter and more recurved, forming vague broad vittæ on the elytra; head scarcely at all impressed, finely, sparsely punctulate; antennæ less than one-half longer than the width of the head; eyes very coarsely faceted, transverse, convex, only very feebly sinuate anteriorly; prothorax moderate, two-fifths wider than long, two-thirds as wide as the elytra, parallel, evenly and moderately rounded at the sides throughout the length, the apex feebly sinuate, narrower than the base, with the angles right, not evidently advanced and not blunt, the basal angles obtuse but not rounded; surface moderately and evenly convex, minutely, not densely punctate, rather abruptly, deeply, somewhat narrowly concavo-explanate at the sides, the edges reflexed and rather thin; elytra parallel, widest at the middle, three-fifths longer than wide, very obtuse and steeply declivous behind, the apical lobe small but evident, the sides evenly and moderately arcuate, the base transversely truncate, with the ends of the basal margin finely dentiform, surface of each with three very broad and feeble tumescent lines, bearing the more numerous vitta-forming short hairs, the punctures minute, granuliferous, sparse, still more remote between the vittæ; flanks vertical, only moderately deep; abdomen broad, moder-

ately convex, finely but strongly, closely punctate, with the hairs long though more decumbent; metasternum extremely short between the second and third coxæ. Length 14.0 mm.; width 6.2 mm. Southern California (Colorado Desert). [*Pelecyporus hirsutus* Lec.].....*hirsuta* Lec.

Body shorter and broader, similar in color and vestiture, except that the long flying hairs are not so long and the vestiture of the legs is less abundant, shorter and much less conspicuous, the vestiture of the elytra aggregated into longitudinal vittæ, which are more distinctly defined than in *hirsuta*; lustre much more shining than in the preceding; head nearly similar but with the erect hairs coarser and more inclined to fulvous in color; prothorax nearly similar but very much shorter, nearly one-half wider than long, the margins strongly but not broadly reflexed, the pubescence coarser and more yellowish; elytra more oblong and relatively broader, one-half wider than the prothorax and nearly three and one-half times as long, rather shining, finely, sparsely granulato-punctulate; legs shorter than in *hirsuta* and much more slender. Length 13.0–14.5 mm.; width 6.0–6.7 mm. California (La Puerta, 85 miles from San Diego; elevation 2500 feet),—Ricksecker.*lineatopilosa* n. sp.

Hirsuta seems to be very rare and I have in my cabinet only a single specimen, which is in all probability a female, as the fourth palpal joint is much less than recti-triangular. The long flying hairs on the entire body, and especially on the legs, give it a very peculiar appearance.

Group II—Type *acerba* Horn.

This group is composed of some of the smallest and by far the most delicate of the American species of the tribe; it is distributed from Utah into northern Mexico and to the westward as far as the Colorado Desert of California. The anterior parts are notably small when compared with the elongate-oval hind body and the latter is as completely devoid of elytral margin as in the first group; the thoracic base is transverse but more evidently arcuate medially than in the latter. The legs are much shorter and very slender, the tarsi relatively longer than in *hirsuta*, very slender and with short, sparser and spinuliform pale hairs beneath, the claws shorter and more arcuate, the anterior tibiæ loosely spinulo-serrate externally. There is considerable diversity in the mentum even within the limits of this rather homogeneous group, this in *acerba* being in close contact with the short obtuse sides of the buccal opening and with a short gular pedestal, while in *tenella* the mentum is mounted on a

notably high pedestal and almost completely clears the still shorter sides of the opening; three species have been discovered thus far.

Hind angles of the prothorax very obtuse and somewhat rounded. . . . 2

Hind angles less obtuse to subacute and scarcely at all blunt, always very distinct. . . . 3

2—Body brownish, subopaque, sparsely clothed with very short erect pubescence, which is yellowish on the head, brownish elsewhere; head sparsely punctate; prothorax one-third broader than long, the apex as wide as the base and feebly sinuate, the sides very regularly arcuate, with the margin feebly reflexed; hind angles obtusely rounded, the base truncate, the surface feebly convex, sparsely and very regularly punctured medially, more densely at the sides; elytra oblong-oval, the humeri broadly rounded, the apex feebly attenuate, the sides rounded, without margin; surface regularly convex, subopaque, sparsely and very finely punctate; under surface subopaque, sparsely and finely punctate; anterior tibiae denticulate on the outer margin. Length 12.0 mm. Utah (St. George). [*Asida acerba* Horn.]

acerba Horn

3—Anterior tibiae not evidently serrulate externally [cf. Horn, under description of *acerba*]. Body black, sparsely clothed with short flavate setae; head punctate; prothorax punctate, sparsely muricate medially, the sides slightly rounded, the margin barely at all reflexed, the base rounded, the angles well marked; elytra sparsely and finely muricate, submargined, oval, the apex acute, strongly declivous. Length 12.5 mm. California (desert along the Colorado River). [*Pelecyphorus hispidulus* Lec.] **hispidula** Lec.

Anterior tibiae evidently but loosely spinulo-serrate externally, the external apical angle much smaller than in *acerba* but very acute, the flavate setae longer; elytra sensibly margined at the sides in the male but very obtuse in the female; eyes very convex and prominent; sides of the head before the eyes very prominent in both sexes, extending laterally as far as the eyes; body rather slender, more ventricose in the female, dark brown, subopaque; head feebly impressed, strongly, rather closely punctate, the erect hairs sparse but distinct; prothorax similar in the sexes, fully two-thirds wider than long, parallel and moderately rounded at the sides, straight or subsinuate near the apical angles, which are rather acute but not produced, the apex scarcely narrower than the base, much less deeply sinuate than in *acerba*; base broadly, feebly arcuate medially, the angles evidently somewhat obtuse but not at all rounded; surface evenly and moderately convex, shining to subopaque throughout, minutely, simply and sparsely punctate medially, with the interspaces extremely minutely and closely punctulate, gradually rather coarsely and closely perforato-punctate laterally, the sides very gradually declivo-explanate, the edge thin and very feebly reflexed; setae sparse, moderately short; elytra two-fifths (σ^7) to two-thirds (φ) wider than the prothorax, two-thirds to one-half longer than wide, oblong-ovoidal, somewhat wider posteriorly, convex, subopaque,

obtuse and strongly declivous behind, the apical lobe small but distinct, the sides less arcuate basally, the humeri very obliquely rounded; surface with feeble unduliform ridges, of which the lateral is rather acute and costuliform (♂) or obtusely rounded (♀), the fine punctures sparse and granuliform, the erect setæ rather long; abdomen opaculate, finely, asperately punctulate, the interspaces very densely and extremely minutely punctulate. Length (♂, ♀) 11.0–13.5 mm.; width 4.7–6.2 mm. Arizona,—Leng. . . *tenella* n. sp.

The three specimens which I have before me under the name *acerba* Horn, do not agree very well with the above original diagnosis of the species, the prothorax being more transverse and more densely punctulate than might be inferred; they were collected in southwestern Utah by Weidt and in northwestern Arizona, which is virtually the type locality. LeConte states that the prothorax in *hispidula* is rounded at base; he certainly would not have used that expression in describing *tenella*, although there is a broad and feeble arcuation. Mr. Leng informs me that the four examples serving to define the latter species were collected in an unrecorded locality in Arizona, but, as they came from Mr. Joutel, they may be from the neighborhood of Phoenix.

Group III—Type *villosa* Champ.

The general appearance of the three known species of this group is highly distinctive and while there is no other type of the entire tribe that approaches them closely, there is still an unmistakable suggestion of generic alliance with the two preceding groups and it is apparently the proper course to consider them therefore a part of *Trichiasida*. The body is broadly oblong-oval, moderately large, convex and clothed with long thin sparse hairs. The well marked elytral margins were presaged in the male of the *tenella* type of the preceding group, and the mentum and anterior tibiæ are almost as in that type, except that the former is larger and that the short sides of the buccal opening are acute and not obtuse; the tarsi differ in being densely clothed beneath with coarse fulvous pubescence, nearly as in *hirsuta*, but the claws are small and arcuate as in *tenella*. Our species are two in number, occurring in widely separated localities.

Body broad, oblong-oval, convex, dark piceous-brown in color throughout, alutaceous in lustre; head barely at all impressed transversely, finely and sparsely punctate, the sides over the antennæ rounded

and more prominent than the eyes; prothorax very nearly twice as wide as long, subparallel and strongly arcuate at the sides, which are more converging and less arcuate anteriorly, the apex much narrower than the base, moderately and circularly sinuate, with the angles right, not much produced but not at all blunt; base transverse, the dentiform protuberances acute at tip and projecting behind the edge, separated by nearly half the basal width, the angles very obtuse but distinct; surface strongly convex, strongly declivous posteriorly between the swellings, very feebly impressed on the median line at the centre, very finely, remotely punctulate, each puncture filled by the base of a hair, the sides moderately broadly, deeply concavo-explanate, equal from apex to base and with larger but very sparse punctures, the edge strongly upturned, thin and irregularly, feebly crenulate; scutellum well developed, triangular; elytra evenly oblong-oval, not quite one-half longer than wide, about a fourth wider than the prothorax and between three and four times as long, the sides evenly and moderately arcuate, rounding in rapidly behind, the apical lobe from above small, obtuse and moderately distinct, the basal angles obtuse but distinct; surface more opaque than the pronotum, with very feeble unduliform ridges, minutely, remotely punctulate, the long erect hairs rather stiff, the shorter and more decumbent hairs more numerous but not forming vittæ; side margins acute, unevenly and finely crenulate, feebly elevated near the humeral angles; abdomen finely opaculate, extremely minutely and sparsely punctulate, the hairs fine, pale and very short; legs relatively rather short, slender. Length (♀) 19.0 mm.; width 9.7 mm. Texas.....**duplex** n. sp.

Body similarly short and convex, black, subopaque; prothorax much less transverse, strongly gibbous, the side margins broad, thickened and slightly reflexed in front, gradually narrowing to the base; apex deeply sinuate, the angles acute; base rounded and with three deep impressions, one scutellar and one on each side, the resulting prominences almost similar to those of *duplex*; elytra broadly oval, the marginal ridge distinct; base truncate, the angles distinct. Length 21.2–25.0 mm. Lower California. [*Asida gibbicollis* and *gabbi* Horn].....**gibbicollis** Horn

In *gibbicollis* there is no recorded reference to pubescence of any kind, but, in view of the evident close relationship of the species with *duplex* and *villosa*, I think there can be but little doubt, either that this feature was inadvertently omitted or that the type specimens were old and denuded. I have restored its original name, which is not preoccupied in *Trichiasida*. From the *Asida villosa* of Champion, described from Puebla, Mexico, *duplex* differs apparently in its sparser vestiture, by the concave margin of the prothorax not being broader toward base, the converging sides apically not sinuate, the anterior angles not so acute or produced and the

abdomen not finely, transversely strigose. The elytra have, similarly, each a tumidity at base opposite the projections of the prothorax, but, in *villosa*, the outer angle of the anterior tibiæ is said to be blunt; in *duplex* it is very finely aciculate and spiniform. The figure given on the plate indicates that the elytra in *villosa* are shorter, being but little longer than wide and that the erect hairs are longer as well as denser than in *duplex*; no mention is made by Mr. Champion of any other elytral vestiture than the erect hairs, while in *duplex* the short subrecumbent hairs are rather the more numerous.

Group IV—Type *impetrata* Horn.

This group includes at present three species. They are rather small in size, convex and black or brown in color, the ridges of the elytra rather obtuse and evidently a more advanced development of the unduliform lines observable in the three preceding groups; they differ from the *hirsuta*, *villosa* and *horrida* groups in the sparser, short and spinuliform black hairs of the tarsal soles, and the anterior tibiæ are much more gradually prominent and acute externally at apex; in the tarsi and mentum they do not differ materially from the second group of the genus.

Body piceous or dark brown in color. Form oblong, the lustre dull; head coarsely, not closely punctate, the occiput and neck densely so; prothorax at least one-half wider than long, widest slightly behind the middle; base not wider than the apex, the latter sinuate, with the angles anteriorly prominent, the sides regularly arcuate, the hind angles rectangular; surface feebly convex, with the lateral margin slightly explanate and slightly reflexed, moderately coarsely, evenly but not densely punctate, along the lateral margin very coarsely punctate, the punctures throughout with extremely short yellow hairs, the lateral edge similarly fimbriate; elytra oblong, twice as long as wide, at base narrower than the prothorax, the humeri very obliquely rounded; marginal ridge nearly attaining the apex; surface very finely and closely punctate, moderately convex and with three costæ, the lateral, beginning at the margin behind the humerus, extending nearly to the apex and sinuous near its end, the second, not quite reaching the base, slightly oblique to the suture and indistinctly joining the outer costa near the apex, the inner faint, joining the second at a fourth from the apex, these costæ and the lateral margin fimbriate at their summits with extremely short hairs; sterna coarsely, not closely punctate; abdomen rather closely and finely, submuricately punctate and with short yellow hairs; legs roughly punctate and slightly hairy. Length 10.5–14.0 mm. California (San Diego). [*Asida impetrata* Horn].

impetrata Horn.

Body deep black in color; elytral ridges not fimbriate, all exactly parallel with the suture.....2

- 2—Form rather stout, strongly convex, oblong-oval, rather shining; head broadly and deeply impressed transversely, rather strongly, closely punctate anteriorly, more opaque and minutely, sparsely punctate basally; antennæ rather slender, black, the joints eight to ten gradually wider; prothorax fully three-fourths wider than its median length, widest behind the middle but with the sides very evenly and moderately arcuate; apex much narrower than the base, very deeply sinuate, the angles slightly blunt at tip; base transverse, very feebly and broadly sinuate at each side, the angles slightly obtuse and blunt; surface evenly and moderately convex, subopaque, minutely, rather sparsely punctate, with a feebly defined impunctate line, the punctures gradually becoming stronger but not notably coarse and still sparse laterally, the sides abruptly and very steeply reflexed, the reflexed part flat, coarsely, subrugosely punctate, the edge thin, the pubescence fulvous and minute throughout, subdecumbent; scutellum moderate; elytra virtually glabrous, oblong-oval, parallel, broadly and evenly rounded at the sides, two-thirds longer than wide, two-fifths to one-half wider than the prothorax, the apical lobe very protuberant and narrowly parabolic; surface decidedly shining, unevenly creased and subrugose, very minutely, sparsely, subgranularly punctulate, the suture but feebly tumescent, the first two ridges obsolescent basally, uniting at apical fifth and thence continued posteriorly for a short distance as a single feeble ridge, the third extending from the margin near the base to apical sixth, free at the end, the margin obtusely costate and unevenly, granularly rugose; humeri obliquely rounded; abdomen alutaceous, minutely, sparsely, asperulately punctulate; legs short, slender, with short stiff black hairs. Length 12.8–13.2 mm.; width 6.6–6.8 mm. Arizona (Huachuca Mts.).....*ignava* n. sp.

Form more slender, similarly convex but more opaque and with more distinct fulvous hairs; head and antennæ nearly similar but with the punctures smaller, feebler and sparser, though extending posteriorly to the vertex; prothorax similar, except that the small punctures are more distinct and rather closer, becoming much coarser and closer laterally, without evident impunctate line and the fulvous hairs longer and much more conspicuous, the sides similar but with the steep flat reflexed part relatively even higher, the edge thicker; elytra narrower and more elongate-oval, with more arcuate sides, opaque, otherwise similar, except that the surface is more evidently though minutely fulvo-pubescent, the ridges narrower at their summits and less widely separated, and that the first joins the third at apical seventh, the second abbreviated and free at the end or sometimes tending to join the first; abdomen more shining, the minute punctulation sparser; legs very slender but relatively a little longer. Length 11.5 mm.; width 5.7 mm. Arizona (locality unrecorded).

impotens n. sp.

There are doubtless a number of other species of this group in southern Arizona and northwestern Mexico.

Group V—Type *horrida* Champ.

As before stated this group is peculiar in having the basal part of the mentum in close contact with the obtusely rounded and rather short sides of the buccal opening and dilated apically, partially enveloping these projections; but the gular pedestal, though shorter, is well developed and, at each of its ends, there is a rather large subcircular opening. The body is flatter above than in the preceding group, larger in size, much more coarsely sculptured and distinctly pubescent, the antennæ slender though rather gradually enlarged through joints eight to ten; the eyes are more coarsely faceted and the sides before them are less laterally prominent, less rounded and, anteriorly, are somewhat angulate in a way quite foreign to any of the preceding groups; the elytral ridges are low, subobtuse and are coarsely granulo-tuberculate along their summits. The external apical angle of the anterior tibiæ is abruptly produced, long, spiniform and finely aciculate, the outer edge strongly spinulo-serrate, and the tarsi densely fulvo-pubescent beneath.

Body oblong-oval, opaculate, dark chocolate-brown in color throughout, the vestiture pale fulvous-yellow; head rather small, scarcely impressed, coarsely and closely punctate; prothorax fully one-half wider than long, the apex much narrower than the base, moderately sinuate, the angles acute; sides rather strongly rounded, more convergent and less arcuate anteriorly; basal angles obtuse but rendered distinct by the small adjacent sinuses of the base, the latter evenly rounded; surface coarsely, rather closely punctate, strongly convex, abruptly rather widely concavo-explanate at the sides, the edge almost vertically reflexed, moderately thin and granulo-crenulate; pubescence rather short and very stiff; elytra barely one-half longer than wide, between a third and fourth wider than the prothorax, obtuse behind, the apical lobe obtuse but distinct; sides parallel, nearly straight, obliquely rounding and reflexed to the very obtuse and blunt basal angles, the thickened costuliform side margin bifurcating slightly behind the humeri and continuing nearly to the apex, the other two discal ridges moderate, the inner feeble and obtusely blunt, both extending from the base to apical fifth, where they unite, the single feeble resulting line extending nearly to the apical angles, crossing and uniting the ends of the two outer ridges, the surface sparsely, unevenly granular and punctate, the larger granules bearing rather short but stiff erect setæ, the smaller and more simple punctures bearing the subdecumbent stiff and peculiarly arcuate but no shorter pale hairs; abdomen coarsely, closely, asperately punctate and with very small and fine pale subdecumbent hairs; legs rather short and slender, subcylindric, the tibiæ and tarsi

densely clothed with inclined stiff hairs. Length (σ^7 , ♀) 15.0–16.0 mm.; width 7.7–8.0 mm. Texas. [*Asida horrida* Champ.].
horrida Champ.

The specimens described by Champion came from Nuevo Laredo, just across the Rio Grande from Laredo, Texas, and I have but little doubt that these Texan examples represent the same species, although there seem to be a few discordances and I do not know that they were taken anywhere near Laredo. The erect hairs of the elytra, for example, are said to be long in the Mexican types, while in those above described they are very short, no longer in fact than the curly decumbent hairs; the figure given on the plate is slightly too slender for the Texan form.

The following species is appended to *Trichiasida* with many doubts. The arrangement of the elytral costæ is exactly that characterizing this genus, but the sinuation of the sides of the prothorax toward base is a character quite at variance with anything hitherto observed, and the author makes no reference to pubescence of any kind, this being present, at least in some form, in all the other species:

Form elongate-oval, black, opaque; head coarsely and sparsely punctate; prothorax subquadrate, moderately convex, coarsely, sparsely and unevenly punctured, the sides [narrowly reflexed], moderately rounded, feebly sinuate posteriorly, the apex sinuate, with the angles not prominent; base truncate, the angles right; elytra elongate-oval, convex, with a distinct marginal costa; base truncate, the angles distinct, each having three nearly straight, parallel, moderately elevated costæ, the surface between the suture and first costa shining, the remainder opaque; costæ extending to apical fourth, the third joining the marginal ridge at basal fifth; under surface opaque, coarsely and sparsely punctured. Length 22.5 mm. Western Nevada. [*Asida semilævis* Horn].....*semilævis* Horn

This species is apparently still represented by the unique type, collected by Mr. W. M. Gabb.

Platasida n. gen.

The type of this genus is a very peculiar and isolated species, recently described from Lower California. The very widely reflexed or flattened margins of the prothorax are remindful of one of the more conspicuous characters in the Blaptid genus *Embaphion*.

It is possible that the *Ologlyptus planatus* of Champion, may also belong to this genus or that it is closely related.

Form rather slender and graceful, dull brown, the suture and two lines on each elytron faintly paler; head coarsely and closely punctate; prothorax more than one-half wider than long, slightly narrower between the basal than the apical angles; apex deeply sinuate, the base bisinuate, the sides regularly arcuate; surface flat, the margin broad and widely reflexed, the edge slightly crenulate and with short hairs; punctures sparse, each with a short hair; elytra less than twice as long as wide, widest at the middle, the humeri very oblique, the lateral margins sharp and slightly reflexed, suddenly incurved at apical fourth, thence oblique nearly to the apex; surface nearly flat transversely and having sparse erect spinules of peculiar structure, they being pectinate on two edges as in the tibial spurs of *Prionochata*; prosternum sparsely punctate, with short and erect hairs, the propleura more coarsely punctate; abdomen finely and sparsely punctate and with short erect spinules; legs roughly punctate and with short hairs. Length 15.0 mm. Lower California (San José del Cabo). [*Asida embaphionides* Horn]. **embaphionides** Horn

Form more slender, the sides of the elytra more reflexed and forming a lobe-like projection on the declivity, very slender and elongate, dark castaneous, feebly shining and with short sparse fulvous hairs, the elytra with short and scattered erect black setæ; head very coarsely and roughly punctured, the neck more finely and densely as usual; prothorax slightly wider than long, the apex deeply sinuate, the sides rather strongly arcuate, very slightly sinuate posteriorly, the base feebly bisinuate, the hind angles right; surface flat medially, coarsely punctate at the sides, which are widely reflexed; elytra slightly wider than the prothorax and about three times as long, the surface rather flat, rapidly declivous posteriorly, the side margin acute, not widely reflexed, terminating at the declivity in a lobe-like process, sparsely and indistinctly punctate, each puncture with a fulvous [previously said to be black] hair or short spine; deflexed sides sparsely spiculose; under surface sparsely punctate and with very short erect spinules; prosternum concave between the coxæ; legs slender, clothed with short hairs, the outer apical angle of the front tibiæ slightly prolonged. Length 13.5 mm. Lower California (San José del Cabo). [*Asida flaccida* Horn].

flaccida Horn

Although Dr. Horn surmised that *flaccida* might be the male of *embaphionides*, I am not convinced, on studying the very good figures of these species, that they are even congeneric, but if not a *Platasida*, there is no other place for *flaccida* among the genera here recognized. The elytral setæ appear to be simple in *flaccida*, or, at any rate, nothing to the contrary is stated and this, together with the basally sinuate sides of the prothorax, would alone show

that it cannot be in any way closely related to *embaphionides*; a corresponding difference in the form of the elytral setæ in generically related species has, however, been previously noted under *Heterasida*. The absence of actual specimens of either of these two very interesting species, renders it impossible for me to give any structural generic characters relating to the mouth-parts, antennæ or tarsi.

Litasida n. gen.

The single type of this genus greatly resembles *polila* of the next, in being deep black, oblong-oval, smooth, and evenly convex and the mentum is similarly notably small, obtrapezoidal, separated from the narrowly rounded, moderately prominent sides of the buccal opening by wide vacant intervals, the gular pedestal high, rather narrow and sinuate and the ligula large tumid and non-retractile. But, as an exception to all other types in this part of the series, the trochantin is obsolete, the sterna separated merely by a cleft, and the elytra are but narrowly inflexed beneath as in *Microschatia*. The eyes and antennæ are nearly as in the following genus, but the latter are distinguished from anything else in the tribe by a sexual modification of the sixth joint in the male, where this joint is distinctly though not greatly wider than either of those adjoining it; the apical part is gradually enlarged through joints eight to ten. The labrum is but slightly transverse, with a small deep apical sinus between two unusually prominent and narrowly rounded lobes. The legs are rather short and moderately slender, except the tarsi which are unusually long, the intermediate in the male somewhat longer than the tibiæ and the posterior four-fifths as long; the tibiæ as well as the under surface of the tarsi have sparse and short pale spinuliform inclined hairs; the claws are rather long, feebly arcuate and distinctly compressed. The type of this rather isolated genus is the following:

Body oblong-oval, evenly and moderately convex, glabrous, deep black throughout and somewhat opaque; head feebly impressed transversely, opaque, minutely, indistinctly punctulate, the epistoma more shining and with distinct but sparse punctures; antennæ rather stout, black, extending (♂) almost to the thoracic base; prothorax three-fifths wider than long, scarcely narrower than the elytra, much narrowed anteriorly from the middle, the apex scarcely two-thirds as wide as the base, deeply sinuate, the angles blunt; base transverse, posteriorly oblique at each side, the angles right, formed entirely

by the strongly reflexed sides, which are narrow anteriorly, becoming very broad basally, the edge thick, perfectly even and finely punctate; sides becoming parallel and feebly arcuate behind the middle; surface broadly, evenly convex, very finely and rather sparsely punctulate, the steeply reflexed sides coarsely, subrugosely punctate; scutellum short, very broadly angulate; elytra three-fifths longer than wide, gradually evenly and obtusely ogival and gradually moderately declivous behind, without apical lobe from above, parallel, the sides feebly arcuate, the side margin narrowly and strongly reflexed, becoming very much elevated toward the basal angles, which are covered by the thoracic angles; posteriorly the margin is even and continuous to the apical angles; surface nearly smooth, evenly convex, minutely and sparsely punctulate; abdomen more shining, finely, sparsely punctate; epipleura becoming narrow and concave at the elytral apex. Length (♂) 12.5 mm.; width 6.2 mm. Mexico (Colonia Garcia, Chihuahua),—C. H. T. Townsend.....*townsendi n. sp.

The prosternum is feebly concave between the coxæ, gradually strongly declivous posteriorly, descending vertically upon the anterior margin of the mesosternum.

Asidopsis n. gen.

This genus is a large one and somewhat composite in external facies, but the species hold together in many important characters, showing that they constitute a true genus and not one or more arbitrary sections of *Asida*. The body is generally stout and oblong-oval but may be slender, as in *macra*, usually convex but sometimes almost flat above, as in some of the *opaca* group and in *planata* which is provisionally included, always glabrous or virtually so. The mentum is more or less small, obtrapezoidal, leaving a vacancy between its sides and those of the buccal opening, which becomes wide in some of the *polita* group, the gular support rather narrow, high and sinuate, the ligula swollen, angularly incised and non-retractile, the eyes of the usual type in this part of the series, having the anterior margin faintly sinuate, and the labrum is narrowly sinuate at tip and moderately transverse. The antennæ are more or less stout, gradually broadening through joints eight to ten, black, setose and not much compressed except apically. The legs are moderate in length, slender, with the usual small stiff hairs, the tarsi rather long, slender, much longer in the male than in the female in the *quadricollis* group, more or less minutely

spinulo-setose beneath, the anterior tibiæ in general gradually and feebly everted and acute externally at apex. The trochantin is distinct and the elytra widely embrace the sides of the body, as in all our genera excepting *Litasida* and the *Microschatia* section, and may or may not have an acute or cariniform margin as in *Euschides*. The prosternum between the coxæ is more like that of *Pelecyphorus* than the *Euschides* type, being rather gradually declivous behind and extending somewhat onto the anterior part of the mesosternum.

The groups, some of which are subgeneric, are five in number as known at present; they may be defined by the following general characters:

- Elytra without a distinct costuliform side margin, except before the middle or near the base; body convex and deep black throughout as a rule, the surface smooth or nearly so.....2
- Elytra with a distinct costiform or cariniform side margin, extending nearly or quite to the apical angles, or at least far behind the middle; basal angles of the prothorax acute and obliquely everted; body less convex, not always deep black.....3
- 2—Body narrow in form, the anterior parts notably small when compared with the hind body; basal angles of the prothorax generally finely acute but only moderately prominent.....Group I
- Body broad and oblong-oval, much more parallel, the prothorax nearly as wide as the elytra and more transverse, with the hind angles obtuse, never prominent; sides of the elytra never cariniform except basally.....Group II
- 3—Elytra feebly convex, each with three lines of wrinkles, which are transversely united by intervening reticulations.....Group III
- Elytra feebly convex to almost perfectly flat, having feeble and confusedly rugose sculpture, which is usually resolvable into some four or five faint and feebly defined approximate longitudinal lines, the minute subgranuliform punctures each with an extremely short inclined stiff seta.....Group IV
- Elytra flat, without longitudinal lines of rugosity, the fine granuliform punctures bearing each a minute hair.....Group V

All of these groups inhabit the southern Rocky Mountain system and its easterly extensions, excepting the last, which is confined to Lower California.

Group I—Type *quadricollis* Horn.

At first glance it would almost seem that this group should constitute a separate genus, the form of the body is so distinctive, but on closer observation it can readily be seen that it is closely affiliated with the following *polita* group, and through that to *opaca*

and allied species, forming the fourth group; so there is an evident interrelationship, as remarked by Dr. Horn in his paper on the Coleoptera of Baja California.

Upper surface more or less strongly shining, sometimes alutaceous to moderately opaque.....2

Upper surface densely opaque; elytra at base never distinctly wider than the thoracic base.....6

2—Elytra not at all margined at the sides, the apex of the humeral angles alone sometimes reflexed and prominent.....3

Elytra with the sides reflexed and cariniform for a varying distance from the humeri, at base much wider than the thoracic base.....4

3—Body very slender and convex, shining; head feebly impressed, coarsely, densely and coalescently punctate; antennæ well developed; prothorax very nearly as long as wide, the apex very evidently narrower than the base, deeply, circularly sinuate, the angles anteriorly prominent, very acute and subverted; base transverse, broadly, feebly sinuate laterally, the angles very acute and obliquely prominent; sides feebly arcuate, broadly sinuate toward the basal and less distinctly near the apical angles; surface evenly convex, only moderately finely, sparsely and strongly punctate, becoming gradually declivo-explanate and coarsely and confluent so laterally, the edge not very thin, not obviously reflexed and rugose; scutellum small; elytra nearly four-fifths longer than wide, three-fifths wider than the prothorax, oval, at base not wider than the thoracic base, widest at the middle, the sides strongly rounded, straight and moderately converging basally, more rapidly converging apically, the apical lobe large but feebly differentiated, the humeral angles slightly obtuse but not at all blunt and minutely, feebly reflexed; surface deeply, rugosely creased, evenly, strongly convex, even though with some broadly obtuse vestigial lines, the punctures minute and sparse; abdomen convex, shining, strongly creased and subscabrous, asperately punctate apically, the prosternum coarsely and closely punctate to the sides. Length (♀) 14.2 mm.; width 6.0 mm. New Mexico (Magdalena),—F. H. SNOW. [*Asida macra* Horn].**macra** Horn

Body shorter and more ventricose, the surface smoother; head subopaque, feebly impressed, rather coarsely punctate, the punctures perforate and moderately well separated; prothorax nearly as long as wide, more quadrate, the apex but just visibly narrower than the base, otherwise similar, except that the punctures on the declivo-explanate lateral part are not quite so coarse, more perforate and close though much less coalescent; elytra scarcely two-thirds longer than wide, four-fifths wider than the prothorax, the base evidently wider than the thoracic base, more depressed or nearly flat gradually toward the suture, the sides more strongly arcuate, the apical lobe produced and acutely ogival but scarcely at all differentiated; surface smoother, more feebly, very irregularly and closely creased, very minutely and sparsely punctulate, each with obsolete vestiges of

two fine discal costules, the humeri right, not blunt, the apex of the angle thickened, notably reflexed and laterally exposed; abdomen shining, very finely subrugulose and with very feeble scattered asperulations, the last two segments asperately punctate, with the interspaces minutely, closely punctulate; prosternum much less closely and less coarsely punctate throughout than in *ma.ra.* Length (♀) 13.0–15.0 mm.; width 5.4–6.9 mm. Texas.

eximia n. sp.

- 4—Reflexed sides of the elytra very short, not extending from the humeri a distance greater than a fourth the length of the prothorax, broadly rounded externally and auriculiform. Form elongate, the surface strongly shining; head strongly impressed, coarsely, moderately closely punctate, gradually more finely so posteriorly; antennæ longer than usual, attaining the base of the prothorax (♂) or shorter (♀); prothorax scarcely a fifth wider than long, parallel, the sides evenly and moderately arcuate to the apical angles, which are but little produced and blunt, straight or subsinuate toward the basal angles; apex sensibly narrower than the base, strongly, evenly sinuate, the base transverse, broadly, very feebly bisinuate, the angles right and very sharp, sometimes minutely everted; surface evenly and moderately convex, minutely, sparsely punctate, gradually rather broadly but feebly concavo-explanate and coarsely, confluent punctate laterally, the edge thin; scutellum moderate, triangular; elytra fully two-thirds longer than wide, one-half wider than the prothorax, at base also wider than the latter, widest at the middle, the sides straighter and feebly converging thence to the base, strongly rounded and gradually rapidly converging posteriorly to the subacute apex; surface flattened or feebly concave suturally, smooth, confusedly and distinctly creased and finely, sparsely punctate; abdomen nearly smooth, very minutely sculptured; propleura asperato-rugulose, the prosternum smooth, finely, sparsely, asperulately punctate. Length (♀) 13.5–14.0 mm.; width 6.0–6.3 mm. New Mexico,—Gissler. [*Asida quadricollis* Horn].

quadricollis Horn

Reflexed sides of the elytra straight or nearly so, extending posteriorly at least one-half as far as the thoracic length and generally much further, longer as a rule though much more variable in length in the male than in the female; surface lustre rather shining though somewhat obviously alutaceous. 5

- 5—Prothorax relatively very small, the hind tarsi very slender and filiform, much longer in the male than in the female. Form rather stout; head rather strongly impressed and also with a small impression on the vertex, strongly, rather closely punctate throughout; antennæ shorter than in *quadricollis*, not extending to the thoracic base even in the male; prothorax a fourth or fifth wider than long, parallel, the sides evenly but very moderately arcuate to the apical angles, which are moderately advanced, acute and never more than slightly blunt, not more than straight basally, the angles right or slightly more, not prominent but sharp; apex very distinctly nar-

rower than the base, deeply sinuate, the transverse base just visibly and broadly bisinuate; surface moderately convex, very finely, sparsely punctate becoming gradually deplanate (♂) or concavo-deplanate (♀) and coarsely, densely punctate laterally; apical and basal margins narrowly, closely and rather strongly punctate throughout the width; scutellum small (♂) or well developed (♀), equilatero-triangular; elytra short, barely one-half longer than wide, three-fifths to three-fourths wider than the prothorax, also wider than the latter basally, broadly rather depressed suturally, widest at the middle, rapidly acuminate behind, the sides strongly arcuate, less so basally, the marginal carina very strongly, subvertically reflexed basally, gradually more feebly thence posteriorly, disappearing at basal sixth to medially (♂) or at about basal fourth (♀), the surface smooth, sometimes feebly creased, sparsely, very minutely punctate; abdomen nearly smooth, the punctulation scarcely visible, the punctures small and sparse but distinct apically; propleura not or scarcely rugulose, minutely, sparsely and asperulately punctate, the prosternum almost similarly or more finely so. Length (♂) 11.0–12.0, (♀) 14.0 mm.; width (♂) 5.2–5.9, (♀) 6.7–7.0 mm. Arizona (Huachuca Mts.).....**cochisensis** n. sp.

Prothorax even smaller than in *cochisensis*, the tarsi similarly very slender, the posterior slightly longer than in the female of that species. Form (♀) less stout, deep black and much less shining, in fact very nearly as opaque as in *pinalica*, the head somewhat feebly impressed, densely opaque, only moderately punctate; prothorax very slightly wider than long, nearly as in *cochisensis*, except that the sides are rather less broadly concave and less strongly punctured, the reflexed edge thinner and the apex less deeply sinuate; elytra fully two-thirds longer than wide and fully three-fourths wider than the prothorax, the oblique sides in apical two-fifths much more gradually converging and nearly straight to the more acute apex, in basal two-fifths moderately converging and feebly arcuate, the reflexed edge extending between a fifth and sixth from the bluntly rounded humeral angles; surface nearly as in *cochisensis* though opaque and with the punctures much less minute but extremely feeble; abdomen nearly similar, the last segment more narrowly rounded. Length (♀) 14.5 mm.; width 6.4 mm. Arizona (Huachuca Mts.),—Chas. Schaeffer.....**gracilipes** n. sp.

Prothorax quadrate, relatively much larger; hind tarsi much stouter than in *cochisensis* or *gracilipes*. Form nearly similar but less ventricose; head nearly similar, the punctures not quite so coarse, well separated; antennæ nearly similar; prothorax slightly wider than long—counting the medial length as usual, for the sides are as long as the width;—sides parallel and only very slightly arcuate, continuing equally so to the apical and basal angles, the former blunt but advanced, the latter somewhat more than right but sharp, not prominent; apex but just visibly narrower than the base, deeply sinuate; base almost rectilinearly truncate; surface nearly as in *cochisensis* but more alutaceous or subopaque, the minute punctures

less sparse and the sides rather more widely concavo-explanate, coarsely and irregularly punctate; elytra slightly more than one-half longer than wide, at base distinctly, and at the middle barely two-fifths, wider than the prothorax, the sides medially more abruptly and subprominently arcuate and thence rapidly converging to the subacute apex, only very feebly arcuate and feebly convergent to the base, the reflexed carina similar, extending fully to the middle; surface rather more broadly convex, opaculate, almost perfectly smooth, the sparse creases very fine and feeble, the punctures much more minute and only just visible, sparse; abdomen dull, almost smooth, more shining and distinctly, sparsely punctate apically; prosternum almost similar; intromittent spicule extremely slender, almost filiform. Length (♂) 12.8 mm.; width 6.0 mm. Arizona (locality unrecorded). *suavis* n. sp.

- 6—Form rather stouter than usual, opaque; head impressed transversely, deeply, rather coarsely and densely punctate, less coarsely but still perforately on the vertex; antennæ moderate; prothorax not quite as long as wide, the apex distinctly narrower than the base, deeply, evenly sinuate, the angles advanced and finely acute; sides broadly angulate at the middle, thence converging and straight to the apex anteriorly and parallel to feebly converging and straight to sub-sinuate to the basal angles, which are slightly less than right, sharp, more or less prominent, the base being very feebly bisinuate, becoming feebly posteriorly oblique laterally; punctures deep and perforate, small and moderately sparse, becoming gradually coarse and more or less dense toward the sides; median parts evenly and moderately convex, gradually and rather widely concavo-explanate laterally, the edge somewhat sharply though moderately reflexed and thin; scutellum small, equilatero-triangular; elytra three-fifths longer than wide, one-half to two-thirds wider than the prothorax, gradually very moderately declivous and obliquely acuminate posteriorly, the parabolic apical lobe rather prominent; sides strongly arcuate to the humeri, which are very obtuse with their edge rather finely and very faintly reflexed; surface broadly convex, sometimes flattened suturally, smooth, with faint creases, minute and sparse punctulation and generally with two fine and very faint vestigial costules on each, the sides obtusely rounded in section except at the humeri; under surface piceous, the abdomen rather shining and with fine and feeble sparse asperities; legs moderately long, very slender. Length (♂, ♀) 13.5–16.0 mm.; width 5.8–8.0 mm. Arizona (Pinal Mts.),—Wickham. *pinalica* n. sp.

The species above identified from the female as *macra* Horn, satisfies the original description and was taken in New Mexico by the same collector; it undoubtedly represents that species and, assuming this to be so, shows that the figure given by Dr. Horn is decidedly out of proportion, being much too stout and ventricose. The type of *quadricollis* is also a male, but I have only females in my

cabinet, which prevents me from confirming the very exceptional length of the antennæ ascribed to it by its author. Of *cochisensis* there is before me a very good series of seven males and three females and two notable facts regarding it become thereby apparent, the first being the very great variation in the posterior extension of the reflexed elytral margin in the males and the equally striking constancy in the length of this sharply upturned margin in the female, and the second being the evident and very constant disparity in the size of the sexes. There is very little variability otherwise as far as noted.

Adhering to one of the examples of *cochisensis* is a very regularly elongate-oboval pale yellowish mite, of convex form and highly polished even surface; it is proportionally of very large size, being about 0.78 mm. in length. A specimen of *Phellopsis porcata*, in my collection, bears a number of pale mites which are of a totally different form, being narrowly oblong and parallel, very flat, with the legs longer and protruding for some distance at the sides, the body crossed at the middle by a very fine suture differentiating the abdomen, the small head partially visible; its size is much smaller, being scarcely 0.28 mm. in length. From what I have very casually seen of these mites infesting beetles, they are remarkably diversified and would form a life-long study in themselves.

Group II—Type *polita* Say.

In spite of the very different habitus of this group, due to the stout oblong convex body and transverse prothorax nearly as wide as the elytra, there are no structural characters of moment affecting special organs to distinguish it from the preceding group, excepting the basal angles of the prothorax, which however isolate it conspicuously in the genus; these angles are always obtuse and more or less blunt. The species are mutually so similar that it may be said of all of them that the prothorax is much narrower at apex than at base, the apex circularly and rather deeply sinuate, the base broadly, feebly arcuate, becoming transverse and very feebly sinuate laterally, the hind angles not quite so posterior as the median arcuate part of the base. The elytra are always evenly convex at the sides, becoming acutely carinate and reflexed uniformly in basal fifth to sixth; the elytral base is broadly, feebly sinuate,

the humeral angles nearly right and always well marked. The group is more northern and eastern in distribution than the preceding.

Elytral punctures small to very small and always well separated, the surface even or very nearly; prothorax widest behind the middle. . . 2

Elytral punctures decidedly coarse and dense, the surface of each with three broadly convex, unduliform and feebly defined ridges, separated by sinuous crease-like lines; prothorax widest at the middle. . . 4

2—Sides of the prothorax rather abruptly strongly converging anteriorly in more than apical half and nearly straight. Form oblong-ovoidal, convex, black, the under surface and sides of the pronotum piceous; head rather shining, deeply impressed transversely, strongly but not very coarsely or closely punctate; prothorax three-fifths wider than the median length, the apical angles very acute and the apex scarcely two-thirds as wide as the base, the sides becoming moderately arcuate and parallel behind the middle; surface opaculate, rather strongly, evenly convex, very finely, rather sparsely punctate, somewhat narrowly and abruptly, deeply concave and coarsely rugose laterally, the margin strongly reflexed, finely punctate, becoming gradually much thicker basally; scutellum well developed, triangular, twice as wide as long; elytra large, fully one-half longer than wide, widest at the middle, a fourth wider than the prothorax, broadly and feebly convex, gradually strongly so laterally and apically, rather shining, closely, somewhat deeply, intricately creased and finely though very distinctly but not closely punctate; apex obtuse, the apical lobe small but distinct, the sides parallel and arcuate; abdomen minutely, vermicularly creased, smoother and with distinct punctures posteriorly; prosternum and propleura smooth, extremely minutely and sparsely punctulate. Length (♀) 16.0 mm.; width 8.0 mm. The label states that the single type was collected by Schaupp in California, but this locality may be regarded as doubtful.

consentanea n. sp.

Sides of the prothorax evenly and moderately converging from base to apex, evenly and feebly arcuate throughout. Body deep black, the elytra strongly shining; head transversely and rather sharply impressed, strongly, loosely punctate, the vertex finely and sparsely; prothorax less transverse than in *polita* and with very much less arcuate sides, scarcely three-fifths wider than long, the apex rather more than two-thirds as wide as the base, deeply sinuate with prominent angles; surface alutaceous, very finely, sparsely punctate, deeply, rather narrowly concave and sparsely punctate at the sides; elytra at the middle scarcely a third wider than the prothorax, nearly one-half longer than wide, the parallel sides broadly rounded, reflexed and thickened at base as usual, gradually more converging posteriorly to the strongly rounded and prominent apical lobe, the surface creased, each with three vestigial lines, the inner from the middle of the base gradually approaching the suture posteriorly, the

third joining the margin at basal fourth; punctures fine and sparse, simple; abdomen shining, slightly punctate posteriorly. Length (♀) 15.0 mm.; width 7.0 mm. Colorado. *obsidiana* n. sp.

Sides of the prothorax almost evenly and strongly arcuate throughout the length. 3

3—Sides of the prothorax strongly arcuate. Form broad, oblong-oval, more ventricose in the female; head very moderately impressed, less coarsely and closely punctate than in *consentanea*; prothorax nearly two-thirds wider than long, convex, minutely and sparsely punctulate, shining to opaculate, the rather narrow but deeply concave sides not rugose but only moderately strongly and sparsely punctate, the strongly reflexed edge rather thin, convex transversely and minutely punctate throughout the length; apical angles frequently rather blunt; elytra shorter, scarcely more than a third longer than wide, but very little (♂) to a fourth (♀) wider than the prothorax, obtuse behind, the apical lobe extremely short and undifferentiated; sides parallel and evenly arcuate; surface shining, sometimes alutaceous in the female, minutely and irregularly creased and finely, sparsely punctate; under surface rufo-piceous to deep black, shining, the abdomen nearly smooth, punctate apically; prosternum and propleura smooth and very minutely, remotely punctulate, the meso- and metapleura granose, the latter very feebly however; tarsi very slender. Length (♂, ♀) 12.0–15.0 mm.; width 6.6–8.0 mm. Kansas and Nebraska. [*Asida polita* Say].

polita Say.

A—Body broad, oblong-oval, moderately convex, deep black throughout; head moderately impressed, sparsely punctate, gradually rather strongly so anteriorly; antennæ gradually slender basally; prothorax short, nearly three-fourths wider than long, the apex fully three-fourths as wide as the base, the angles right and not very blunt; sides evenly, rather strongly arcuate from base to apex, nearly as in *polita* throughout but opaque and with a feeble transverse impression at each side before the base; edges strongly reflexed, rather thin but becoming thick near the basal angles; elytra very short, only little more than a fourth longer than wide, rapidly narrowing behind, the lobe broad and moderately defined, widest slightly behind the middle, the sides broadly arcuate, very feebly converging and straight from the middle to the humeral angles, less than a fourth wider than the prothorax; surface broadly, feebly convex above, opaque, minutely and intricately creased, with patches of finer reticulation, the small punctures very feebly impressed; each elytron with vestiges of three broad and slightly more convex vittæ; side margins rather acute as far as the middle but reflexed as usual only near the base; under surface and legs as usual; tarsi very slender. Length (♂) 12.0 mm.; width 6.4 mm. Kansas. *subopaca* n. subsp.

B—Body narrower and more parallel than in any other species, opaque, the anterior parts alutaceous, the under surface rufo-

piceous and shining, deep black above; head rather narrowly and deeply impressed transversely, somewhat strongly punctate, closely so anteriorly; antennæ slender; prothorax scarcely three-fifths wider than long, the apex more than two-thirds as wide as the base, deeply sinuate, the angles acute and very sharp, not at all blunt; sides evenly and rather strongly arcuate, the converging sides anteriorly straight; surface nearly as in *polita* but duller, the concave side margins more shallow and more punctate, the edge rather thin throughout; scutellum wider than long; elytra one-half longer than wide, less than a fifth wider than the prothorax, less rapidly narrowed at apex than in *subopaca* and with the more acute apical lobe still less differentiated, widest at the middle, the sides parallel and evenly, rather feebly arcuate to the base, the lateral edges subacute nearly to apical fourth, the humeral reflexed margin thinner than in *subopaca*; surface much more convex throughout the width, opaque, very minutely and reticularly creased in small denser and sparser patches, the punctures larger than in *polita* but more feebly impressed; each elytron with traces of three very feeble costules, the inner rather distinct, posteriorly uniting with the second on the declivity and the common line thus formed indicating union with the end of the third costule, which however is not traceable at any other point; abdomen nearly smooth, polished, punctate apically; tarsi very slender, the legs picescent. Length (♂) 12.0 mm.; width 5.75 mm. Kansas (Wallace Co.),—Warren Knaus. . . . *futilis* n. subsp.

- 4—Form stout, convex, oblong, deep black throughout; head shining, broadly and feebly impressed transversely, rather strongly, moderately closely punctate; prothorax one-half wider than long, the sides rounded at the middle, thence converging and but feebly arcuate apically and just visibly converging and nearly straight basally, the basal angles right and narrowly rounded, the apical moderately acute; surface shining, convex, minutely, sparsely punctulate, the marginal concavity narrower apically than basally, sparsely and more distinctly punctate, the edge reflexed, notably thick, densely and strongly punctate; median line very feebly impressed toward base; elytra about a third longer than wide, nearly a fourth wider than the prothorax, very obtuse behind, the small apical lobe short but distinct; sides parallel and evenly arcuate; surface strongly convex, but feebly shining, densely rugose and with rather close-set punctures, which are larger than usual; abdomen shining, smooth, very minutely punctulate, gradually more closely and strongly so posteriorly. Length (♂) 13.8 mm.; width 7.0 mm. Wyoming (Saratoga) *dolosa* n. sp.

The three vestigial costules sometimes traceable and described in more detail under *futilis*, by their number and arrangement, the outer joining the side margin near the base, indicate a certain consanguinity between this genus and *Trichiasida*, a fact, however, that might be inferred as well from their general morphology.

These costules are sometimes feebly traceable also in the *quadricollis* group, but they never appear in the *opaca* group, where the basal angles of the prothorax assume a different form, being obliquely prominent and acute. It is apparent, however, that the *quadricollis* and *polita* groups are better considered a section of *Asidopsis*, having as its type *opaca*, than as a part of *Trichiasida*. These three costules moreover, arranged as stated, appear also in very visible form in the *puncticollis* group of *Euschides* and elsewhere, and in fact characterize a large part of the American *Asidini*, so that they alone are not of any great weight in determining the limits of individual genera.

Group III—Type *mancipata* Horn.

Not having a representative of *mancipata* at hand, it is impracticable for me to give any useful information concerning this group, of which I can only repeat the few characters published by Dr. Horn.

Body as in *opaca* in form; head and prothorax opaque, the elytra more shining; head sparsely and rather finely punctate and with a few scales; prothorax broader than long, the apex slightly narrower than the base and sinuate, the sides moderately arcuate, sinuate before the basal angles, which are acute and moderately prominent; surface feebly convex, coarsely and rather densely punctured and opaque, the sides moderately reflexed; elytra oval, more rapidly narrowed at apical third, at base slightly broader than the prothorax, the margin acute and entire, slightly reflexed at the humeri, which are moderately prominent; surface feebly convex and with three irregular and feebly elevated costæ, united by intervening reticulations; under surface feebly shining, finely rugulose and subpunctate. Length 13.0–16.0 mm. New Mexico (Grant Co.). [*Asida mancipata* Horn].....**mancipata** Horn

In the remarks following the original description it is stated that the male is more slender than the female, with the elytra feebly convex, the female stouter, with the elytra more convex but depressed along the suture.

Group IV—Type *opaca* Say.

This group is more diversified in habitus and structure than the *polita* group, though perhaps somewhat less so than the *quadricollis* group. The body is densely opaque, and lustreless in the great majority of species, but in at least one is strongly shining, and the side margins of the elytra are by no means constant. The *opaca*

group is rather more widely diffused in geographic range than the preceding, inhabiting the Rocky Mountains from Montana to southern New Mexico and eastward well into Kansas and Texas.

Side margins of the elytra very unstable in extent at least in the male, acute but reflexed only at the humeral angles, becoming obtuse or lost in some examples even before the middle, but in others extending fully to apical sixth, in the female extending to about apical fourth; body deep black and in great part shining above and beneath. Form rather narrow and notably convex, broader and less convex in the female; head opaque, strongly impressed transversely, coarsely and closely punctate, the punctures very dense and asperate on the vertex, each with a minute slender hair, the vertex impressed medially as a rule; antennæ stout, much compressed throughout; prothorax almost as in *opaca*, nearly one-half wider than long, the apex deeply sinuate, two-thirds to three-fourths as wide as the base, the latter broadly bisinuate, posteriorly oblique laterally, equal in width to the elytral base, the apical angles acute, slightly blunt at tip, the basal strongly and obliquely acute; sides broadly arcuate, broadly sinuate basally; surface alutaceous, coarsely, densely punctate, the punctures granose at their anterior margins and very irregularly condensed, leaving impunctate spots, the sides broadly, feebly concave basally, more narrowly so anteriorly, the moderately reflexed edges rather thick, densely punctate; elytra three-fifths (♀) to three-fourths (♂) longer than wide, only just visibly wider than the prothorax (♂) to one-third wider (♀), convex, strongly shining, deeply and very confusedly rugose, with large uneven indentations and coarsely but not deeply punctate, each puncture with an anterior asperity, the surface irregular, having generally about four narrow and close-set longitudinal ridges, which are feeble, very irregular and more visible inwardly; abdomen shining, with fine and feebly asperulate punctulation, punctate posteriorly; legs slender. Length (♂, ♀) 13.0–15.0 mm.; width 5.8–7.2 mm. New Mexico (Fort Wingate).

***nitidula* n. sp.**

Side margins of the elytra feebly cariniform and rather constant, always extending to about the summit of the apical slope. Form stouter than in *nitidula* and larger in size, similarly deep black throughout but more opaque, the elytra not so shining, similarly convex; head nearly similar but rather less densely and strongly punctured, the antennæ distinctly longer; prothorax larger, the sides gradually feebly converging from base to apex, similarly sigmoid, rounding anteriorly, broadly sinuate basally, the basal angles obliquely acute and prominent; surface but very feebly convex, opaque, coarsely, very densely punctate, rather more broadly and less strongly concavo-explanate at the sides, the punctures not evidently granuliferous; elytra barely more than one-half longer than wide, at base as wide as the total thoracic base to slightly wider, just visibly widest behind the middle, the sides very feebly arcuate, rounding behind to the large and conspicuous apical lobe, dis-

tinctly convex, feebly shining, very irregularly, sublinearly sculptured nearly as in *nitidula*, but on the whole less strongly, the punctures rather coarse, rugose, coalescent, not well defined and minutely granuliferous, though not as strongly so as in that species; abdomen shining, minutely, sparsely punctulate. Length (♂, ♀) 13.5–16.8 mm.; width 6.0–7.7 mm. New Mexico (Jemez Springs), —John Woodgate. **woodgatei** n. sp.

Side margins more stable and cariniform, extending almost to the apical angles; body in great part opaque, generally broader and less convex, the elytra more minutely, sparsely and more or less asperately or subgranularly punctulate. 2

2—Elytra feebly or very moderately though evidently convex. 3

Elytra almost perfectly flat except posteriorly. 7

3—Prothorax never very much narrower than the elytra, at base fully as wide as the elytral base and sometimes a little wider. 4

Prothorax notably small, much narrower than the elytra. 6

4—Upper surface sericeous in lustre, more shining beneath, deep black throughout; head opaque, feebly and broadly impressed, finely and very sparsely punctate; antennæ very stout; prothorax two-fifths wider than long, much narrowed before the middle, the apex scarcely more than two-thirds as wide as the base, deeply, circularly sinuate, the angles bluntly rounded at tip; sides broadly arcuate, gradually sinuato-everted basally, the angles very acute; surface feebly convex, moderately coarsely, closely but unevenly punctate, the punctures scarcely asperate, each with a minute pale hair, broadly and gradually concavo-explanate and rugose laterally, the edge strongly reflexed, rather thick, punctate; elytra three-fourths longer than wide, equal in width to the base of the prothorax, parallel, the sides straight, gradually rounding inward posteriorly from the middle, the apical lobe large, short and feebly differentiated; surface rather strongly convex, sericeo-opaque, each with about three broad and very irregular, shallow, suberoded furrows, separated by wider feeble irregular convexities and with numerous large shallow irregular indents, the minute punctures moderately sparse, finely but very strongly granuliferous, the hairs excessively short and barely discernible; abdomen shining, the extremely minute punctulation scarcely at all asperulate, the posterior punctures as usual; legs well developed, the tarsi rather long, nearly as in *nitidula*. Length (♂) 16.0 mm.; width 6.9 mm. Colorado,—Schaupp. **tensa** n. sp.

Upper surface less convex, broader and more opaque, not sericeous. 5

5—Form broadly oblong-oval, grayish-black, more shining and deeper black beneath; head broadly, feebly impressed, rather closely and strongly punctate anteriorly, more finely and sparsely on the vertex, each puncture with a short stout pale and subdecumbent hair; antennæ moderately stout; prothorax nearly as in *tensa* but shorter, three-fifths wider than long, rather feebly convex, somewhat coarsely, deeply, densely and more or less asperately punctate, very broadly and gradually reflexed and rugose laterally, the edge not very thick, each puncture with a very minute pale hair; apical angles blunt at

tip, the basal obliquely everted and acute; elytra one-half to three-fifths longer than wide, parallel, at the middle very slightly wider than the prothorax, the sides feebly arcuate, rounding inward and becoming rapidly oblique in posterior two-fifths, the side margins feebly reflexed basally as usual; surface with large irregular shallow indents, sometimes so arranged as to give an appearance of four or five feebly elevated longitudinal lines, the minute punctures rather close-set, asperulate, each with a very minute short seta; abdomen with minute anastomosing creases, punctate posteriorly; legs relatively somewhat short and slender. Length (♂, ♀) 13.5–17.8 mm.; width 6.2–8.6 mm. Kansas, Colorado and Montana,—Austin, Knaus and others. [*Asida opaca* Say].....**opaca** Say.

Form narrower and less parallel, the size smaller, blackish-piceous in color, opaque; head nearly similar but less impressed and more finely punctate; prothorax smaller, three-fifths wider than long, the oblique sides before the middle much less arcuate, otherwise similar, the punctures rather coarse, very dense and subasperate, the upturned lateral margins rather thinner; elytra at base exactly equal in width to the distance between the apices of the thoracic angles but wider than any other part of the prothorax, two-thirds longer than wide, widest at the middle, where they are fully a fifth wider than the prothorax, similar to those of *opaca* throughout, except that the sides are rather more arcuate and especially more obliquely narrowed behind from only slightly behind the middle; under surface rather shining, nearly as in *opaca*. Length (♂, ♀) 14.0–16.0 mm.; width 6.7–7.1 mm. Kansas,—Snow.....**collega** n. sp.

6—Body very short and broad, grayish-black throughout, opaque, alutaceous beneath; head rather strongly, transversely impressed, somewhat strongly, closely punctate, the small pale hairs very distinct; prothorax formed and sculptured as in *opaca*, except that the sides at the middle are not broadly rounded but very obtusely subangulate, the acute basal angles less everted; elytra very short, only just visibly longer than wide, at base wider than any part of the prothorax, and, at the middle, fully a third wider than the median part of the latter, the sides parallel and broadly arcuate, rapidly rounding and converging in a little less than apical two-fifths, the apical lobe large and obtusely rounded but distinct; surface less convex than in any of the preceding species, in fact almost flat, the approximately four narrow tumid lines on each distinct, the minute granular punctures sparse, each bearing the usual very minute pale seta; side margins somewhat reflexed throughout but more obviously toward base, the humeral angles obtuse, thickened and rounded; abdomen minutely but rather strongly sculptured, more punctured posteriorly as usual; legs slender, the tarsi rather long. Length (♂) 14.0 mm.; width 7.1 mm. New Mexico (Las Vegas).

abbreviata n. sp.

Body much narrower, similarly deep grayish-black and opaque, somewhat sericeous; head scarcely impressed, finely, sparsely punctate, the small hairs very distinct; prothorax smaller than in any other species,

nearly as in *opaca* but with the apical angles more acute, not blunt at tip, the sides evenly arcuate, very feebly sinuate basally, the basal angles very acute but not much everted except rather rapidly at tip; surface coarsely, densely but irregularly punctate, not very asperulate, the minute pale hairs distinct, the concave lateral part more coarsely and differently punctate and rugose as usual; apex much narrower than the base; elytra nearly two-thirds longer than wide, at base much wider than the prothorax, and, at the middle, two-fifths wider than the latter, much more gradually obliquely narrowed in apical two-fifths than in *abbreviata* or *opaca*, the surface more convex than in the former, as in *opaca* throughout, the longitudinal irregular tumid lines much less distinct, broader and less numerous than in *abbreviata*, the sides parallel and broadly arcuate, the side margin acutely cariniform but not reflexed except basally, not much thickened at the humeri; abdomen almost opaque, shining and punctate apically; legs slender, not quite so long. Length (♂) 13.7 mm.; width 6.3 mm. Colorado (Salida).—Wickham.

***servilis* n. sp.**

- 7—Prothorax very widely reflexed at the sides throughout the length. Form broad, oblong, very opaque, brownish-black, sometimes besmeared with earthy matter to a rather greater extent than *opaca*; head rather broadly impressed transversely, finely, rather sparsely punctate, with distinct pale hairs; prothorax large, very transverse, fully two-thirds wider than long, fully as wide as the elytra (♂) to slightly narrower (♀), at apex scarcely more than three-fifths as wide as at base, very deeply, circularly sinuate, the angles bluntly rounded at tip; sides strongly, evenly arcuate to the tips of the apical angles, converging much anteriorly, parallel and broadly sinuate basally, the angles acute and obliquely prominent; surface broadly and moderately convex, densely punctate but not so coarsely as in *opaca*, the punctures asperulate, bearing each a minute and rather stouter pale seta; broad lateral concavity coarsely punctato-rugose, the strongly reflexed edge rather thin; elytra a third to two-fifths longer than wide, the sides gradually rounding inward posteriorly from slightly behind (♂) to slightly before (♀) the middle, obtusely ogival at apex, the lobe but feebly differentiated; surface but slightly and very unevenly undulated, sometimes with the usual longitudinal lines distinctly suggested, the rather sparse and very minute asperulate punctures each with the usual minute pale seta, the cariniform lateral margin very evidently reflexed throughout, strongly so and thickened at the humeri; abdomen alutaceous, with very minute anastomosing creases, the fifth segment dull and asperulately punctate, shining and strongly punctate only at apex; legs as usual. Length (♂, ♀) 13.9–16.0 mm.; width 7.2–8.4 mm. New Mexico (Cloudcroft).—Knaus.....***immunda* n. sp.**

Prothorax less widely and not quite so strongly reflexed, more narrowly so anteriorly than posteriorly, the conformation as in *opaca* throughout. Form broad and short, more oboval than in *immunda*, blackish-piceous, not quite so densely opaque but even more prone to be coated

with earthy matter; head moderately impressed and punctured, the pale hairs stout; prothorax fully two-thirds wider than long, nearly as wide as the elytra (♂) to decidedly narrower (♀), rather wider at the middle than at the basal angles, the latter acute and posteriorly prominent but scarcely at all everted, the sides rather strongly, evenly arcuate, more converging anteriorly to the acute and seldom very evidently blunted apical angles, the apex three-fifths as wide as the base, less deeply sinuate than in *immunda*; surface similar but becoming coarsely punctato-rugose medially in the female, though not in the male; elytra short, barely two-fifths longer than wide, the parallel sides more strongly arcuate than in the preceding species, rounding inward posteriorly behind the middle, the apical lobe moderately differentiated; surface rather less flat, each with about four close-set irregularly sinuous unduliform and feebly tumid lines, the side margins reflexed throughout, strongly toward base but not much thickened; abdomen more shining than in *immunda*, punctate apically; legs rather more slender. Length (♂, ♀) 15.0–16.0 mm.; width 7.7–8.5 mm. New Mexico (Magdalena Mts.),—Snow.

cænosa n. sp.

It is highly probable that *nitidula* and *tensa* are related to *mancipata*, in spite of the very different type of elytral sculpture inferable from the original description of the latter species, and, as *nitidula* is certainly a member of the *opaca* group, very evidently connected with the more normal species through *tensa*, it follows, if this surmise is correct, that *mancipata* is also a member of the *opaca* group and that a special group for that species is unnecessary. The finely and sparsely punctate head and three irregular elytral ridges, united transversely by anastomosing reticulation, stated of *mancipata*, coupled with the broader elytral base, would indicate that it cannot be a modification of *nitidula*, but as in *tensa* the head is finely and sparsely punctate and the elytra may be conceived to have each three broad and feebly elevated lines, it is supposable that *mancipata* may be related more closely to *tensa* than to *nitidula*; but *tensa* has the elytra no wider at base than the prothorax and the elytral ridges are separated by feeble irregular and equally wide depressed lines, or rather depressions caused by the more lineiform arrangement of the very irregular indentations and in no way united by reticulation. Grant Co., New Mexico, the locality of *mancipata*, lies in the extreme southwestern angle of the territory, about 200 miles south of Fort Wingate, McKinley Co. The Kansas specimens of *opaca* are obviously flatter in the elytra than the Colorado specimens and may be subspecifically different.

The Mexican species described by Champion under the name *Asidi forreri*, probably belongs to this *opaca* group of *Asidopsis*, as does quite certainly the following, although having aberrant basal thoracic angles:

Form nearly as in *opaca* but more elongate, deep grayish-black, opaque, glabrous, the hairs of the elytra not discernible under a hand lens; head very feebly impressed transversely, rather coarsely but sparsely and not deeply punctate posteriorly, finely and sparsely so anteriorly, each puncture with a small stiff seta which is black (♂) or pale (♀); prothorax a fourth to barely a third wider than long, the apex evidently narrower than the base, the sinus elliptical and not very deep, the angles slightly blunt at tip; sides very evenly and moderately arcuate from the apex of the basal to the apical angles, the base broadly arcuate, becoming rapidly very oblique at the sides, the angles very much produced posteriorly but not at all everted, rounded externally, acute at apex; surface moderately convex, rather coarsely and closely but not confluent or very deeply punctate, with two irregular smooth areas at each side, rather rapidly concave and moderately reflexed, with the sculpture coarser and more rugose at the sides, the edge smooth and punctate but rather thick and obtuse; median line slightly tumid at the base; each puncture bears a small stiff seta, darker in the male; scutellum more shining, not wider than long, acute, moderate in size; elytra fully one-half longer than wide, fully a third wider than the prothorax, at base distinctly wider than the thoracic base, the angles of the latter obliquely overreaching the intra-humeral surface; sides subparallel and feebly arcuate to nearly straight, gradually rounding posteriorly, the apex gradually acute and only moderately declivous; surface very feebly convex, each with four or five, sometimes reduced to three, very feeble obtuse ridges, feebly and remotely united transversely, the punctures rather large and close-set but shallow; side margins cariniform, slightly reflexed, strongly so and thickened at the humeri, extending almost to the apical angles; abdomen minutely, feebly chagrined and sparsely, almost imperceptibly punctulate; last palpal joint of the male rather large but virtually recti-triangular. Length (♂, ♀) 18.0–19.0 mm.; width 8.0–9.0 mm. Mexico (La Borrega, Durango).. **durangoensis* n. sp.

Differs from *opaca* in its relatively narrower and more elongate prothorax, with externally rounded and incurvate hind angles.

Group V—Type *planata* Horn.

In this group the elytra become flat as in some of the *opaca* group but differ from anything known there in being perfectly smooth and without the characteristic irregularly indented or undulate sculpture of *opaca* and its related forms. As in the case

of *mancipata*, constituting group III, I am compelled to simply quote the characters given in the original description of the single known species, which inhabits a geographic region far removed from that of the *opaca* group.

Body having the exact form of *opaca*, black, subopaque; head coarsely punctate; prothorax coarsely and closely punctate; elytra slightly broader at base than the prothorax, the humeri distinct, the margin at that point slightly reflexed, transversely flat, the marginal carina very nearly reaching the apex, the surface even, without costæ or wrinkles, having small sparse granules, each bearing a minute hair; under surface of the prothorax very coarsely punctate, granulate each side of the coxæ, the entire mesosternum and sides of the metasternum granular; abdomen finely, sparsely punctate, the last two segments more densely; legs closely punctate. Length (♀) 16.0 mm. Lower California (San Francisquito). [*Asida planata* Horn].....**planata** Horn

This species is still represented by the unique type.

Megasida n. gen.

This is one of the more characteristic genera of northern Mexico, being there represented by numerous species, only one of which has thus far been observed to come across our boundary in western Texas. The body is of large size, including some of the largest of the tribe. *Megasida* is evidently closely related to *Asidina*, *Trichiasida* and *Asidopsis*, but differs in its much larger mentum, which is transversely parallelogramic, with rounded sides, fitting closely against the obtuse sides of the buccal opening, the latter moderately deep; the gular pedestal is very wide and rather short. The last maxillary palpal joint is moderate in size and exactly recti-triangular in the male, as in the genera mentioned, the same joint in the female being still smaller and less than right angled at its point of attachment. The head, eyes, labrum and antennæ are of the same general type as in the preceding genera. The prosternum rapidly and almost vertically descends upon the anterior margin of the mesosternum, by which the genus can always be distinguished from the *obsoleta* group of *Stethasida*, to which it often bears a striking resemblance as noted by Mr. Champion. The legs are moderately long but rather slender, the anterior tibiæ very moderately everted and acute externally at apex, with a few serrules along the outer edge, and the tarsi are rather long and with

short sparse spinules beneath, as in the preceding genus. The assumed type of the genus may be described as follows:

Body rather stout, moderately inflated posteriorly, convex, shining, glabrous, deep black throughout; head and prothorax alutaceous, the former feebly impressed transversely, rather coarsely but sparsely punctate throughout, the antennæ (♂) as long as the prothorax or shorter (♀), rufo-piceous apically, with the rather long but sparse bristling setæ dark fulvous; prothorax one-half wider than long, the apex distinctly narrower than the base, deeply, circularly sinuate, with the angles acute and not blunt at apex, the sides rather strongly rounded medially, thence moderately converging and straighter anteriorly and less converging and broadly, feebly sinuate basally, the base transverse, posteriorly and obliquely sinuate at the sides, the angles acute and obliquely, moderately prominent; surface broadly, rather feebly convex, very finely and remotely punctulate, rather abruptly but not very widely though strongly reflexed at the sides, the sparse punctures there only a little stronger but with the surface transversely rugose toward the edge, which is rather thin and subeven; scutellum broadly triangular; elytra three-fifths longer than wide, widest slightly behind the middle, two-fifths (♂) to nearly three-fifths (♀) wider than the prothorax, at base very slightly wider than the thoracic base, the sides arcuate, rapidly rounding in behind, the apical lobe large and distinct, obtusely rounded; surface strongly convex, even, shining, with rather coarse and remotely scattered punctures, the side margins somewhat angulate in section and distinct but not carinate to apical fourth, becoming cariniform and reflexed only at the humeri; under surface with rather coarse, sparse punctures throughout, becoming closer on the last segments of the abdomen; legs a little longer and stouter in the male than in the female. Length (♂, ♀) 21.0–22.0 mm.; width 10.8–11.9 mm. Texas (El Paso). [*Asida obliterata* Champ.]. **obliterata** Champ.

The original description given by Mr. Champion extends to only two or three lines and was founded upon specimens taken at Paso del Norte, Mexico, just across the Rio Grande from El Paso; so I infer that the form described above, taken by Mr. Dunn, is the true *obliterata*. Besides this species, those described in the "Biologia" under the names *Asida rufipes*, *moricoides*, *fæda*, *tarda* and *latissima* by Mr. Champion, will also form part of the genus *Megasida*.

Stethasida n. gen.

This genus differs from any of the preceding, except the *Microschatia* section and *Astrotus*, in having the prosternum between the coxæ prominent at tip and not deflexed to the apical margin of the

mesosternum. This character is certainly an important one among the American members of the Asidini, though apparently of less definite value among the European representatives of the tribe, the importance of a character being determinable solely by its constancy and consistency. With a general habitus which is sufficiently uniform and readily recognizable, the body assumes two distinct forms, the species of the first group being more ventricose and larger than those of the second, glabrous in the former, sparsely covered with rather long erect setæ in the second; the elytra are strongly margined at the sides nearly to the apical angles and quite uniformly throughout the genus, but, singularly enough, the only species to exhibit any sign of discal costæ is the type named *Pelecyphorus obsoletus*, by LeConte, though just why it was placed in that genus is not clearly understood, as the fourth male maxillary palpal joint is sharply recti-triangular, while in the female it is acute at the angle of attachment, just as in all the preceding genera subsequent to *Euschides* in the table. The mentum is short and transversely obtrapezoidal, touching the sides of the buccal opening, which are moderately short, obtuse in the first group and rather acute at tip in the second. The base of the prothorax is truncate or broadly sinuate, the basal angles generally acute and sometimes obliquely prominent, the elytral base about as wide as the thoracic base and the humeral angles obtuse and usually rather blunt though evident, the reflexed cariniform margin not notably more elevated basally. The trochantin is well developed, the eyes, labrum and epistoma as in *Euschides*, the anterior tibiæ generally finely everted and acutely aciculate externally at apex, the legs and tarsi moderate; the antennæ are rather slender, with the tenth joint somewhat abruptly wider nearly as in *Trichiasida*. The two subgeneric groups may be defined as follows:

- Body larger and rather stout, more ventricose, glabrous, the tarsi rather long, having short spinuliform hairs beneath.....Group I
 Body smaller, sometimes very small, more parallel, the prothorax never more than slightly narrower than the elytra; dorsal surface sparsely clothed with erect flavo-fulvous setæ; tarsi much shorter, densely clothed beneath with inclined stiff pale hairs.....Group II

The first of these groups occurs in Arizona and southern California, but the second seems to be confined to the latter region and is more maritime, being particularly abundant near San Diego.

Group I—Type *obsoleta* Lec.

This group is moderately rich in species and considerably diversified, the elytra are rather uniformly and finely granulate throughout, the granules becoming still more minute and more or less simple punctures suturally; the tibiæ are subcylindric as in *Pelecyphorus*.

Elytra with a short carinule near the side margin; also with two other more or less evident raised lines on each.....2

Elytra never with more than feeble evidence of the lateral carinule or raised lines.....3

2—Prothorax rather well developed, always much more than half as wide as the elytra; legs of the usual length and moderately slender. Head feebly impressed, not coarsely, somewhat closely punctate, the antennæ slender and short, piceous-black; prothorax moderately, the elytra more strongly, shining, the former black, subparallel, with broadly rounded sides, becoming sinuate at the prominent and slightly everted basal angles, about a fourth wider than long, the apex generally but little narrower than the base, moderately deeply sinuate; punctures usually rather strong, deep and close, the surface broadly reflexed and concave and more coarsely punctate at the sides, feebly, transversely impressed along the basal margin; elytra black or very nearly, two-fifths to one-half wider than the prothorax and two and one-half to nearly three times (♀) as long, oblong-oval, the sides broadly, subevenly arcuate, the apical lobe well developed. Length (♂, ♀) 13.7–17.0 mm.; width 7.3–8.5 mm. (California—Bolcan Mt., 5000 feet elevation, near Julian, San Diego Co.),—Ricksecker. [*Pelecyphorus obsoletus* Lec.].....**obsoleta** Lec.

A—Larger and broader than *obsoleta*, black, rather shining, the head transversely impressed and also with a rounded posterior impression as in the preceding, strongly but more loosely punctate; prothorax larger and broader, two-fifths wider than long, more narrowed at apex and with more rounded sides, less sinuate near the hind angles, otherwise similar; elytra broader and more oblong, rather less convex, each with three distinct costuliform lines, rather more rounded toward the humeri. Length 19.0 mm.; width 9.4 mm. California (Bolcan Mt., 5000 feet).

expansa n. subsp.

B—More ventricose than in either of the two preceding, with relatively smaller anterior parts and with the entire surface less shining or subopaque, deep black; head similar, except that the transverse impression is much wider and shallower, the pit at the middle of the vertex deep; prothorax throughout nearly as in *obsoleta*, strongly and closely punctured in the type, the transversely elevated part behind the middle flatter and less accentuated; elytra more posteriorly inflated, nearly two-thirds wider than the prothorax, the sides evenly converging and broadly, feebly arcuate basally, the three fine raised lines on each very feeble in the type though evident. Length 16.0 mm.; width 8.4 mm. California (Julian),—Dunn.....**opacella** n. subsp.

- Prothorax very small, scarcely more than half as wide as the elytra, black, the elytra feebly picescent, feebly, the elytra rather strongly, shining; head nearly as in *expansa* but with the vertexal pit almost obsolete; prothorax as in *obsoleta* but relatively much smaller; elytra in form and sculpture nearly as in *obsoleta*, the three raised lines on each evident, the external shortest and composed even more evidently of close-set irregular tubercles; legs much shorter and still more slender than in any of the preceding, the size decidedly smaller. Length 14.0 mm.; width 6.8-7.4 mm. California (Bolcan Mt., 5000 feet).....**brevipes** n. sp.
- 3—Sides of the prothorax rather broadly concave and gradually, though more or less strongly, reflexed as in the preceding species.....4
- Sides of the prothorax more narrowly and abruptly, very steeply, though not more strongly, reflexed; legs and tarsi unusually short, nearly as in *brevipes* but much stouter, with slender tarsi, their general appearance nearly as in *discreta* though shorter.....8
- 4—Legs and especially the tarsi unusually stout; lateral edges of the prothorax distinctly thicker. Body stout, deep black throughout, subopaque, the elytra slightly shining especially suturally and on the broad inflexed sides; head feebly, transversely impressed, coarsely, somewhat closely punctate, with a deep impression at the middle of the vertex; prothorax fully one-half wider than the median length, the apex much narrower than the base, very deeply, circularly sinuate, the angles acute, not blunt at tip; sides strongly, subevenly arcuate from the apical angles to the very feeble sinuation before the basal angles, which are acute and slightly prominent; base posteriorly suboblique laterally, the surface flat, with a very strong and transversely arcuate tumescent swelling at about basal third, coarsely, deeply and very closely but not coalescently punctate, more sparsely on the anterior transversely sinuate slope of the ridge and sparsely as well as more coarsely toward the sides, the edges densely, rugosely punctate; elytra oblong-oval, parallel, widest at the middle, nearly one-half longer than wide, almost one-half wider than the prothorax, the sides evenly arcuate, rapidly rounding basally and similarly so apically, the apical lobe broad, obtuse, rather distinct; upturned margin rather thick and uneven, the surface but very feebly convex, with two feebly impressed furrows on each, also somewhat transversely creased, the granules very distinct laterally; inflexed sides finely, sparsely granulose; abdomen somewhat shining, slightly crumpled, finely, rather sparsely, subasperately punctate; legs as usual, very strongly, densely sculptured and with very short stiff hairs. Length (σ^7) 18.0 mm.; width 8.9 mm. California.....**torpida** n. sp.
- Legs unusually stout, the tarsi long and relatively very slender. Body more corpulent than usual, black, feebly shining, the elytra slightly picescent and rather strongly shining; head broadly and feebly impressed transversely, strongly and closely punctate; antennæ slender, about as long as the prothorax, the third joint one-half longer than the fourth; prothorax subparallel, with broadly rounded sides be-

coming very feebly and broadly sinuate toward the acute basal angles, the apex much narrower than the base, deeply sinuate, the angles acute but not everted; surface deeply and closely punctate, more coarsely toward the sides; elytra widest behind the middle, two-fifths longer than wide, three-fifths wider than the prothorax and only about twice as long, the sides unusually converging and less arcuate basally, the surface feebly convex, nearly even, with fine sparse granules laterally, becoming obsolescent and very fine toward the suture; legs moderately long, the hind tarsi more than three-fifths as long as the tibiæ. Length (♂) 16.5 mm.; width 8.7 mm. California (Julian).....**discreta** n. sp.

Legs and tarsi both rather slender, nearly as in *obsoleta* and allied forms..5

5—Prothorax strongly narrowed toward apex, the latter very much narrower than the base.....6

Prothorax more parallel, the apex generally but little narrower than the base.....7

6—Body deep black throughout and only moderately shining, nearly as in *obsoleta* but relatively more parallel, convex and subcylindric, the elytra each with one or two fine irregular subimpressed lines toward the suture; head strongly, rather loosely punctate, deeply impressed transversely in but little more than median half, the vertexal pit distinct; prothorax fully a third wider than long, strongly, subprominently rounded at the sides at about the middle, the sides converging and becoming straight to the acute basal angles, feebly arcuate and strongly converging to the anteriorly prominent acute apical angles, the surface transversely convex near basal third and, anteriorly, feebly impressed sublaterally; elytra three-fifths to three-fourths longer than wide, subevenly oval. Length 16.3–17.5 mm.; width 7.3–7.7 mm. California (Bolcan Mt., 5000 feet),—Ricksecker.

longula n. sp.

Body black, feebly shining, the elytra dark rufo-piceous and strongly lustrous; form much stouter, less convex and less cylindric than in *longula*; head moderately punctate, not deeply impressed transversely in median two-thirds, the vertexal pit shallow; antennæ short and only moderately slender; prothorax large, nearly two-fifths wider than long, otherwise nearly as in the preceding, except that the converging sides become sinuate in front of the prominent basal angles, the surface similar and rather strongly, closely punctate; elytra but little more than one-half longer than wide, subevenly oval, almost imperceptibly wider behind the middle, two-fifths wider than the prothorax and two and two-thirds times as long, the apical lobe stronger and more differentiated than in *longula*. Length 19.5 mm.; width 9.3 mm. Southern California,—Dunn.

convergens n. sp.

7—Form rather stout and moderately convex, black or blackish, feebly, the elytra moderately, shining; head feebly impressed transversely in but little more than median half, rather finely to more strongly, somewhat closely punctured, the vertexal pit obsolescent typically; prothorax but slightly wider than long, subparallel, with more or

less broadly and very moderately rounded sides, the latter generally feebly sinuate before the acute and prominent basal angles, the punctures rather close, varying much in size, the surface moderately tumid medially and subposteriorly, the basal slope moderate; elytra about one-half longer than wide, a little more than one-half wider than the prothorax and two and one-half times as long, subevenly oval, though very slightly widest behind the middle. Length 18.0 mm.; width 8.3–9.6 mm. Southern California (probably at some point in the Colorado Desert),—Dunn.....**adumbrata** n. sp.

Form more slender than in *adumbrata* and less cuneiform than in *occulta*, piceous-black throughout, alutaceous, the elytra slightly shining; head well impressed, coarsely and sparsely punctate; prothorax parallel, with rather arcuate sides and very acute prominent apical angles, the deeply sinuate apex slightly narrower than the base; surface very strongly, transversely tumid near basal third, very abruptly, strongly, almost vertically reflexed at the sides, the punctures rather small and well separated, the interspaces very minutely, closely and unevenly punctulate; elytra (♂) three-fifths longer than wide, nearly four-fifths wider behind the middle than at base and three-fifths wider than the prothorax, the sides very evenly arcuate, the apical lobe very large and broad but not well defined; surface nearly as in *adumbrata*; abdomen rather closely and strongly, asperately punctulate; legs long, the tarsi longer than in any other species, the posterior three-fifths as long as the tibia, with the basal joint half as long as the median line of the prothorax. Length (♂) 17.5 mm.; width 8.0 mm. California (without indication of locality or collector).....**tarsalis** n. sp.

Form more slender and more cuneiform, more shining, rufo-ferruginous in color throughout—possibly to some extent from immaturity; head rather strongly, transversely impressed and centrally pitted, the punctures rather coarser than usual, deep, moderately close-set; prothorax relatively much smaller than in the preceding, about a fifth wider than long, apparently even a little wider at apex than at base, the basal angles prominent, the sides broadly and feebly arcuate, sinuate basally, the surface nearly as in the preceding; elytra three-fifths longer than wide, subcuneiform, decidedly wider well behind the middle than elsewhere, the sides thence subevenly converging and feebly arcuate to the base, the short sublateral carinule represented by a series of small and widely separated tubercles, these being never more than very feebly developed in *adumbrata*; apical slope very steep, the lobe short but abrupt. Length 15.5 mm.; width posteriorly 7.8 mm. Arizona.....**occulta** n. sp.

8—Body small in size and notably ventricose, black; head and pronotum dull, the former rather feebly impressed transversely and at the middle of the vertex, the punctures moderately large, well separated; prothorax small, about a fifth wider than the median length, the apex almost as wide as the base, elliptically and only moderately deeply sinuate, the angles moderately advanced and acute; sides rather feebly, subevenly arcuate throughout but becoming sinuate

at the basal angles, which are very acute, everted and obliquely prominent; surface transversely tumid behind the middle, thence gradually sloping and nearly flat, with two feeble impressions at each side, to the apex, rapidly and convexly sloping basally, the punctures relatively rather coarse, deep and moderately close; sides thin, not much more coarsely punctate and rugose; elytra barely one-half longer than wide, four-fifths wider than the prothorax, evenly oval, widest at the middle, the sides evenly arcuate to the obtuse but only slightly blunt humeri, not very rapidly rounding behind, the apical lobe large, obtuse and but feebly differentiated; surface of each nearly flat but sloping upward to the suture from the moderately thick margins, almost vertically declivous behind, smooth, alutaceous, each with two fine vestigial costules, the granules laterally very distinct; abdomen unusually finely and sparsely, subasperately punctulate, very finely punctate apically; tarsi very slender. Length (♀) 13.7 mm.; width 7.0 mm. California (Colorado River, San Diego Co.),—Fuchs.....*unica* n. sp.

The apical lobe referred to is the apex of the elytra as seen from a viewpoint vertically above, and results from the overhanging of the bulging posterior flanks; this apical lobe sometimes becomes very conspicuous and is occasionally very nearly obsolete as in some examples of *adumbrata*; it is not of very much importance taxonomically. *Obsoleta* is represented in my collection by a rather homogeneous series of twenty-two specimens, and I fail to note any one that might be considered a bond with either *expansa*, *brevipes* or *longula*.

Group II—Type *muricatula* Lec.

The species of this group are almost as numerous as those of the *obsoleta* group; they are much smaller and especially more slender and parallel in form, and present an equally difficult and uncertain taxonomic problem. The prothorax is seldom much narrower than the elytra, the latter smooth, though as in the preceding group, sparsely granulose, the granules however being larger, each bearing a longer or shorter erect seta, the length of which is to some extent proportional to the size of the granule, the latter differing in size among themselves more evidently than in group I. The sexes do not differ very much, the male being somewhat smaller and more abbreviated as a rule than the female; but the maxillary palpi are notably small and feeble in both sexes. I would propose the following seven species and two subspecies:

- Elytra cylindrically convex. 2
- Elytra notably depressed, broadly and but feebly convex from one side margin to the other; body unusually small in size; erect hairs of the elytra shorter than usual and not so conspicuous. 7
- 2—Basal angles of the prothorax everted and prominent, very acute. Body relatively rather stouter and large in size, very convex, moderately dark brown, the elytra pale brownish-rufous; head moderately impressed transversely and at the middle of the vertex, opaculate, rather coarsely, closely punctate; antennæ short and slender; prothorax large, very nearly as wide as the elytra, two-fifths wider than the median length, widest slightly behind the middle, the apex only moderately and elliptically sinuate, evidently narrower than the base, the angles not much advanced and slightly acute, not blunt; sides strongly arcuate behind the middle, converging basally and sinuate before the angles; base truncate, broadly, feebly sinuate laterally; surface moderately convex behind the middle and medially thence anteriorly with a distinct impression at each side before the middle, the base somewhat flatter, strongly, closely and perforately punctate, each puncture with a small yellow hair, gradually rather widely and strongly reflexed, coarsely punctate and rugose laterally, the edge thin, granose, the surface opaculate, polished laterally; elytra four-fifths longer than wide, parallel, widest at the middle, the sides very evenly arcuate, the humeri obtuse but not rounded, the apex gradually ogival; surface very convex, steeply declivous behind, very highly polished throughout, the granules very sparse, strong, the setæ only moderate in length; side margin thin, serrulato-granose; abdomen convex, shining, finely, sparsely and subsparsely punctulate and with short pale inclined hairs; legs rather short, strongly rugose and with short stiff inclined pale hairs; prosternum coarsely, closely punctate, the propleura much more finely and sparsely; meso- and metapleura with perforate punctures. Length (♀) 15.7 mm.; width 6.4 mm. California. . . . *stricta* n. sp.
- Basal angles of the prothorax acute but never much everted or prominent, rarely spiculiform and minutely everted as in *tenax*. 3
- 3—Body stouter in form and of larger size. 4
- Body slender and generally of smaller size. 5
- 4—Body stouter than in any other species, brown, the elytra a little paler and more rufous; head rather shining and well impressed, coarsely, perforately, unevenly punctate; prothorax very large, almost as wide as the elytra, fully one-half wider than the median length, the apex much narrower than the base, deeply, circularly sinuate, the angles right; sides strongly, evenly arcuate to the apex and to the basal angles, which are right; base sinuously oblique at the sides; surface subevenly but rather feebly convex, faintly alutaceous, feebly impressed at each side of the middle near the apex, rather coarsely, perforately punctate, densely so on the posterior slope, the sides broadly and gradually, very strongly reflexed, polished, coarsely punctate and rugose, the edge thin and strongly granulo-serrate; elytra evidently widest at two-thirds, three-fourths longer than

wide, moderately obtuse posteriorly, the apex rather prominent and ogival; sides feebly converging and slightly arcuate to the obtuse and rather rounded humeral angles; surface polished, with the tubercles unusually numerous and strong, mingled with many others which are smaller and feebler, the side margins only very moderately elevated, very uneven and granose; erect setæ rather long; abdomen with small, strong, imbricate reticulations, with a minute acute puncture at the posterior end of each imbrication, shining, the pale hairs very short; prosternum coarsely, tubercularly rugose. Length (♂) 11.5 mm.; width 7.0 mm. Southern California,—Sanford.

pertinax n. sp.

Body less stout and duller, dark blackish-brown to ferruginous in color; head moderately impressed transversely and on the vertex, dull, coarsely and very densely punctate throughout; prothorax moderate, one-half wider than long, nearly as in *pertinax* in outline, except that the apex is much less deeply though circularly sinuate and less greatly narrower than the base, and that the basal angles are extremely feebly everted though right, the surface much more strongly tumid transversely at basal third, impressed just behind the middle at each side of the moderate anterior convexity, rather coarsely, perforately and densely but not coalescently cribrate throughout, the side margins broadly and gradually but much less strongly reflexed, coarsely and densely punctato-rugose, the edge strongly serrulate; elytra four-fifths longer than wide (♀), a little shorter (♂), nearly a fourth to fully a third wider than the prothorax, parallel (♂) or slightly posteriorly enlarged (♀), the sides moderately and evenly arcuate, the apex obtuse, very steeply declivous, the apical lobe moderate though evidently differentiated; surface of each with traces of two obtuse discal ridges, shining when clean but usually with a thin opaque indument, the tubercles rather sparse, strong and fine intermingled, the erect setæ moderate, the margins moderately elevated and feebly serrulate; abdomen nearly smooth, finely, asperulately punctulate (♀) or strongly so medially, becoming nearly smooth laterally (♂). Length (♂, ♀) 13.0–16.0 mm.; width 5.6–6.6 mm. California. [*Pelecyporus muricatus* Lec.].....**muricatula** Lec.

A—Much more slender and parallel than *muricatula*, though very similar otherwise, except that the elytra (♂) are only between a third and fourth wider than the prothorax and, instead of being limited at the sides of the upper surface by a definite reflexed cariniform line as is usually the case, this marginal line becomes obsolescent and is represented only by a series of small irregular tubercles along the summit of the acutely subprominent margin. Length (♂) 13.5 mm.; width 5.4 mm. Southern California.

languida n. subsp.

5—Sides of the prothorax strongly oblique and converging posteriorly; side margins of the elytra simply acute, bearing isolated irregular tubercles somewhat as in *languida*. Form moderately stout, somewhat ventricose, very convex, dull in lustre, black throughout;

head moderately impressed, coarsely but not very closely punctate; prothorax two-fifths wider than the median length, widest slightly before the middle, the sides strongly arcuate, gradually unusually strongly convergent, becoming broadly and very feebly sinuate, basally; apex about as wide as the base, moderately sinuate, the sinus somewhat angulate at the middle, the angles acute; basal angles right, sharp; surface somewhat shining, feebly convex, markedly declivous basally, feebly impressed at each side in more than apical half, coarsely, very closely punctate, rather broadly explanate, very coarsely punctate and granularly rugose laterally, the edge thicker than usual and only very slightly and gradually reflexed, granose and uneven; pale hairs very small, long and bristling at the sides; scutellum small, as long as wide, very acute; elytra evenly oval, parallel, nearly four-fifths longer than wide, almost one-half wider than the prothorax, the sides evenly arcuate; apex steeply declivous and rather gradually parabolic; surface strongly convex, the granules sparse but strong, the setae long; side margins very narrowly declivo-explanate, costiform, closely, confusedly granose; abdomen finely but strongly asperulate, closely so medially, less closely though not very sparsely laterally; legs very short, rather stout; last palpal joint very pale as usual, exactly recti-triangular in the type. Length (♂) 14.4 mm.; width 5.9 mm. California. *socors* n. sp.

Sides of the prothorax parallel, feeble, to rather strongly arcuate but never very conspicuously oblique posteriorly; side margins of the elytra having, as usual, the form of acutely elevated cariniform lines, which are irregular or subtuberculose along their summits, after the manner of nearly all the species of this genus. 6

6—Body subcylindrically convex, dark brown in color, the elytra paler brown; head moderately impressed transversely and on the vertex, the punctures rather coarse, well separated; prothorax small, between a fourth and fifth wider than long, the apex fully equal in width to the base, only moderately deeply, elliptically sinuate, the angles slightly acute; sides rounded at or before the middle, gradually converging, becoming broadly and feebly sinuate to the basal angles, which are right and sharp; surface rather feebly convex, more or less impressed at each side before basal third, rapidly declivous posteriorly, coarsely, more or less closely punctate, rather abruptly strongly reflexed and coarsely punctato-rugose at the sides, the thin edges strongly serrulate; scutellum acute, about as long as wide; elytra two-thirds to three-fourths longer than wide, not very obtuse but very steeply declivous behind, a third to nearly two-fifths wider than the prothorax, very strongly convex, more or less shining, sparsely, unevenly granose, the side margins moderately reflexed, thin, strongly granose, the setae only moderately long; abdomen finely, asperulately punctate, more closely toward the middle in the male, the pale hairs short. Length (♂, ♀) 11.8–12.8 mm.; width 5.2–5.7 mm. California (San Diego Co.). [*Asida angustula* Csy.] *angustula* Csy.

A—Body similarly small and slender though more parallel, the prothorax but scarcely visibly narrower than the elytra, blackish-

brown throughout; head deeply impressed transversely and on the vertex, rather closely punctate, coarsely so anteriorly, less coarsely thence to the base; prothorax short, fully one-half wider than long, the apex evidently narrower than the base, not very deeply, elliptically sinuate, the angles slightly acute, sharp; sides evenly and strongly arcuate from the apical angles, barely becoming straight at the basal angles, which are right and very sharply defined; surface and sides nearly as in *angustula* but not so evidently impressed and with the margins narrowly but not quite so strongly reflexed, the median parts duller in lustre and the small pale hairs more distinct; scutellum a little broader; elytra narrower and less arcuate at the sides, parallel, four-fifths longer than wide, not quite so convex, similarly parabolic at tip and steeply declivous, the sparse granules much smaller, the erect hairs shorter; abdomen distinctly, rather closely, evenly and asperately punctulate throughout; prosternum sparsely punctate. Length (♀) 12.8 mm.; width 4.8 mm. California (San Diego Co.).

inepta n. subsp.

Body narrow and very elongate, much more slender than any other species of the genus, very convex and subparallel, moderately shining and rather pale ferruginous-brown throughout; head distinctly impressed transversely and deeply so at the middle of the vertex, the punctures coarse, deep, generally well separated; prothorax small, but little more than a fifth wider than long, throughout nearly as in *angustula* and about as wide at apex as at base but with the basal angles minutely everted and acutely dentiform, the thin and strongly reflexed edges more coarsely crenulate; elytra about twice as long as wide, one-half wider than the prothorax and between three and four times as long, obtusely parabolic and steeply declivous behind, the sides parallel, very feebly arcuate, rounding more basally and rapidly rounding apically; surface very convex, subcylindric, the granules very sparse but rather strong, the erect setæ long; side margins only slightly reflexed, moderately thin, strongly granulo-serrate; abdomen subopaque, rather coarsely, very strongly granulo-asperate throughout, the pale hairs unusually long and very conspicuous; legs rather short, slender. Length (♀) 13.8 mm.; width 5.5 mm. California (San Diego).....*tenax* n. sp.

7—Body oblong, parallel, moderately slender, dark red-brown, the elytra slightly paler, shining; head deeply, transversely impressed, rather coarsely, closely punctate; prothorax transverse, fully one-half wider than long, the apex much narrower than the base, the sinus very moderate in depth and elliptical, the angles but slightly less than right and somewhat blunt; sides evenly, somewhat strongly arcuate, the basal angles right; surface very moderately convex, steeply declivous behind to the abruptly deplanate basal margin, feebly bi-impressed at each side of the middle in apical three-fifths, rather shining, coarsely, somewhat closely punctate, less coarsely and very closely before about the middle, rather abruptly, strongly reflexed, coarsely, closely punctate and rugose at the sides, the edges

thin and finely, irregularly crenulate; hairs small even along the edges; scutellum twice as wide as long, well developed, the tip very acute; elytra two-thirds longer than wide, scarcely a fourth wider than the prothorax, parallel, rapidly very broadly ogival and obtuse behind, the sides evenly and rather feebly arcuate, surface polished, the granules moderately sparse, not very large, mingled larger and smaller; lateral margins rather strongly elevated, not very thin, densely, granularly rugose; abdomen shining, finely but strongly, closely asperato-rugulose, less densely toward the sides; legs moderate, rather stout. Length (σ^7) 11.0–11.8 mm.; width 4.8–5.0 mm. Southern California,—Sanford and Schaupp.....*vegrandis* n. sp.

The individuals of the various species in this group of *Stethasida* seem to be solitary in habits to a considerable degree, and it is therefore but seldom that series can be taken in any one locality. For this reason the set of nine specimens of *muricatula* in my collection is not very homogeneous, and forms, seemingly varietal, could readily be set aside from it; but it would be of slight utility to attempt this at present. In stating *angustula* to be simply the male of *muricatula*, Dr. Horn neglected to even cursorily examine the types; for, if he had done so, he could not have avoided perceiving that the original type of *angustula* is itself a female. This species, in point of fact, bears no close resemblance to *muricatula*, except in the general characters of the group, and there can be no doubt of its validity. The genitalia are seldom even partially visible externally in this group and the male and female differ but little in outward appearance or in the maxillary palpi. When males and females are both present in a series, the sexes can be recognized very easily by differences in the length of the hind tarsi, the latter always being longer in the male.

III—STUDIES IN THE LONGICORNIA OF NORTH AMERICA.

On rearranging the Cerambycids of my collection, it is noted that the major part of nearly all the larger genera is composed of material thrown together without sufficiently detailed study as a rule. An attempt is made in the following pages to separate the various units and subunits more carefully and on closer lines, in order to better portray what the evolutionary forces have so far accomplished. Some groups such as *Prionus* and *Tylosis* appear to be in a more plastic condition than others at the present time, including forms which though specific or subspecific according to criteria derivable from general comparative studies in the Coleoptera, are so connected by what might be interpreted to be intermediates, or depart so little from the common model, that it seems correct to assume them to be less well established than others and destined to speedy extinction in the struggle for existence; but it seems desirable to define these less accentuated forms as well as the others, in order to record what really exists at the present epoch of the earth's history. It is only by carefully recording such data that certain phases at least of the processes or laws of evolution can be finally deduced. It is quite possible that some species already described and recorded in our lists in this and other families, such as uniques remaining such for more than half a century for example, of which we can recall a number, are transitory forms of this kind that have appeared in comparatively few individuals and soon crowded out of existence by reason of changed environment or other uncongenial conditions. I think however that all the forms to which names are here attached, will prove to be at least subspecific and therefore worthy of definition and formal record.*

* All the species herein described as new inhabit the continent of North America, excepting *Zalophia spissicornis* and *Cyllene andesiana*, which form part of the fauna of Ecuador.

Family SPONDYLIDÆ.

Subfamily PARANDRINÆ.

Parandra Latr.

The species of this genus are numerous and widely distributed but in many cases are difficult to discriminate. There seem to be three specific American forms included in the material before me, not including *polita* Say, which I do not have at present, except in a series of six examples of the Central American form, named *cylindrica* Thoms., which is said by Horn to be identical with *polita*; it is very elongate, subdepressed and parallel; the other three species as represented by the male may be separated as follows:

Carina along the anterior face of the hind tibiæ much nearer the inner than the outer edge; eyes well developed, fully two-fifths as long as the median length of the head; color dark testaceous throughout. Body very stout, finely and sparsely punctate; head very wide, but little narrower than the prothorax, the mandibles arcuate, slightly shorter than the head; antennæ barely as long as the width of the latter; prothorax three-fourths wider than long, obtrapezoidal, about as wide as the elytra, the latter barely one-half longer than wide. Female more elongate than the male, with less transverse and more parallel prothorax and much smaller head and mandibles. Length (♂, ♀) 17.5-18.5 mm., width 6.3-6.6 mm. Indiana.

ampleiceps n. sp.

Carina medial; eyes very much smaller, between a third and fourth as long as median line of the head.....2

2—Color dark piceous throughout, parallel, elongate, finely, sparsely punctate; head moderate, distinctly narrower than the prothorax, the mandibles more slender, arcuate, shorter than the head; antennæ much longer than the width of the latter; margin of the epistoma gradually and feebly anteriorly prominent medially and in the form of a broad cusp; prothorax but little more than one-half wider than long, obtrapezoidal; elytra three-fourths longer than wide. Length (♂) 15.2 mm.; width 4.6 mm. New York... **brunnea** Fabr.

Color pale brownish-testaceous throughout, very variable in size, stouter than *brunnea*, the antennæ not quite so long as the width of the head, the mandibles nearly as in the two preceding; epistomal margin abruptly dentiform at the middle; prothorax a little wider than the head, two-thirds to three-fourths wider than long, obtrapezoidal; elytra two-thirds longer than wide. Female differing as in the female of *ampleiceps*. Length (♂, ♀) 9.4-16.8 mm.; width 3.0-5.6 mm. Pennsylvania and westward. Abundant.

gravidula n. sp.

In addition to these more definite forms, there are two specimens at hand that are aberrant; one, a female, exactly like the ordinary

female of *gravidula* but with two broad basal furrows on the occiput, separated by one-half the width of the latter and slightly diverging from the base, not extending quite to the posterior line of the eyes and with the elytral punctures nearly twice as numerous as in any other example; the occipital furrows may be a malformation, in which case there would be insufficient ground for naming it. The other specimen is a large stout female, nearly black in color throughout, otherwise nearly like the female of *ampliceps*, except that the head is a little smaller, the prothorax more transverse and the elytra longer. I have placed it with *brunnea* for the present. The above measurements exclude the mandibles.

The following is probably different from *glabra* Degeer, with which Mr. Bates may have placed his material from a near-by locality:

****Parandra obsolescens*** n. sp.—Stout, parallel, moderately convex, highly polished, impunctate and pale brownish-testaceous in color throughout; eyes well developed, moderately convex; prothorax two-thirds wider than long, the sides straight and parallel, with fine reflexed margin before the middle to the obtuse apical angles, then broadly, circularly rounding, with wider concave margin around the basal angles to the median truncature, which is a little more than half the total width; elytra parallel, circularly rounded conjointly at apex, as wide as the prothorax and three-fourths longer than wide; carina of the hind tibiæ near the inner edge. Length (♀) 26.0 mm.; width 8.2 mm. Costa Rica (Chiriqui).

The antennæ are of somewhat different structure from those of the three American species described above, the depressed sensitive grooves not being narrow and well separated but broader, shallower and coming together on the under edge of the joints along a fine and entire carina. Under careful observation with good optical power, the remains of punctuation may be traced throughout the body in the form of excessively fine, sparse and feeble points. The coarse deep longitudinal groove at each side of the front, does not quite attain the apical margin at the base of the mandibles. From what is said of *glabra* by Bates, it would seem that it is always punctate, for he speaks of varying degrees of punctuation; the present form is impunctate within the ordinary meaning of that term, but at the same time *obsolescens* may prove to be no better than a subspecies.

Subfamily SPONDYLINÆ.

Spondylis Fabr.

The species of this genus, while strikingly uniform in general appearance, prove to be rather numerous and amply well defined. *Upiformis* Mann., and *laticeps* Lec., the former from southern Alaska and the latter from Lake Superior, are both unknown to me but are undoubtedly distinct from any of the five here described; *upiformis* is rather small and slender, the type being 13 by 4.5 mm. in size, which is all the useful information derivable from the original diagnosis, while *laticeps* is unusually large, with the head as wide as the prothorax, the latter subcarinate medially; the length of the type is 18.7 mm. The body is a little stouter and larger in the female than in the male, with distinctly smaller head and slightly shorter antennæ, but differs very little otherwise. The range of the genus is from the palæarctic faunal regions, through the western parts of subarctic North America; it does not occur in the American Atlantic regions. The western and Sonoran species in my collection may be known as follows from the male except in *basalis*:

Sides of the prothorax oblique basally but not or scarcely at all sinuate, the base never notably prolonged or subtubulate; anterior parts only a little narrower than the elytra.....2

Sides of the prothorax becoming sinuate basally, the basal part prolonged and notably subtubulate; anterior parts much narrower than the elytra. 6

2—Antennæ longer, extending distinctly beyond the base of the elytra..3

Antennæ notably short, not extending beyond the elytral base.....5

3—Prothorax bi-impressed on the disk and with a sharply defined and subprominent median impunctate line, not quite attaining the apex.

Body stout, moderately shining and black, nearly glabrous above, the under surface with short and moderately close, fuscous and inconspicuous hairs; head just visibly narrower than the prothorax, strongly, closely punctate, less strongly and very sparsely toward base, the median line not modified, except finely and feebly impressed, obsolescently so basally; basal joint of the antennæ arcuately subcylindric; prothorax transverse, one-half wider than long, widest and broadly rounded at the sides well before the middle, the impressions shallow, irregular, symmetrically placed; elytra parallel, obtuse at apex, three-fifths longer than wide, less coarsely punctate than usual, the punctures very dense, the two inner discal lines strong, the outer fine and feeble; metasternal impression large, rounded, the polished bottom of the impression broadly fusiform. Length 16.0 mm.; width 5.6 mm. Utah. Female wanting.

collaris n. sp.

Prothorax not so short and without trace of impressions or in any way modified median line, the basal joint of the antennæ stouter and more rounded. 4

4—Form stout, dullish black; pubescence of the front, mandibles and entire under surface coarse, yellowish and conspicuous, rather dense beneath; head slightly narrower than the prothorax, densely and strongly punctured throughout, more coarsely on the median parts of the vertex than elsewhere and with a shining irregular unimpressed and punctureless median line from the line of the eyes to the base; prothorax nearly two-fifths wider than long, the outline as in the preceding, the surface even, the punctures not so large as those of the head and much shallower, moderately close, somewhat uneven in distribution; elytra a fifth wider than the prothorax, nearly as in the preceding but less finely, less closely and more vermicularly punctate and with the raised lines feebler; metasternal impression shallower, with a fine and impunctate medial subcariniform line throughout. Length 17.0 mm.; width 5.8 mm. Washington State. Female wanting. **robustula** n. sp.

Form less stout, more elongate, more shining and deeper black as a rule, the yellowish-cinereous pubescence of the head and mandibles abundant, that of the under surface long, close, longer but finer than in *robustula*; head coarsely, deeply, very densely punctate throughout, much smaller than in the preceding and distinctly narrower than the prothorax, the median line not modified; prothorax much longer, not quite a fourth wider than long, widest and more strongly rounded at the sides nearer the apex; surface even, the punctures not so large or dense as those of the head, irregular in distribution, deeper than in *robustula*; elytra a fourth wider than the prothorax, nearly three-fourths longer than wide, subevenly, deeply, very closely and moderately coarsely punctured; two raised lines on each distinct, the outer obsolescent; metasternum nearly as in the preceding, except that the impression is less diffused, smaller and deeper, the fine smooth dividing line similar. Female stouter, with coarser sculpture and much less distinct elytral lines than in the male. Length 14.0–16.5 mm.; width 4.8–5.9 mm. California. **subpubescens** n. sp.

5—Body narrow, much more elongate than in any of the preceding, still more shining than in *subpubescens* and similarly very deep black; pubescence sparse above, short and moderately abundant beneath, everywhere dusky and inconspicuous; head very nearly as wide as the prothorax, the punctures moderately coarse, dense anteriorly, slightly coarser and widely scattered from before the middle to the base, the median line not modified; antennæ thick, joints 8–10 on the compressed sides but just visibly longer than wide; prothorax long, between a fourth and fifth wider than long, widest and with broadly rounded and subparallel sides anteriorly, the base relatively more narrowed than usual, the sides just before the basal margin just visibly subsinuate, strongly, irregularly punctate, the median line broadly impunctate basally; elytra nearly a third wider than the prothorax, three-fourths longer than wide, densely punctured, the two inner

raised lines rather strong; metasternal impression smaller than usual. Female very much larger, more coarsely sculptured and stouter than the male, almost similarly proportioned, except that the head is smaller and that the antennæ extend only to basal third of the prothorax. Length (♂) 13.0–16.0, (♀) 17.0 mm.; width (♂) 3.9–4.8, (♀) 5.6 mm. Mexico (Colonia Garcia, Chihuahua),—Townsend.

**erebea* n. sp.

- 6—Not very deep black and somewhat dull in lustre, the pubescence largely denuded in the type but apparently coarse, yellowish-cinereous and abundant beneath; head two-thirds as wide as the prothorax, the punctures moderately strong, everywhere evenly distributed and well separated, the median line striiform on the front only; antennæ very short, but little longer than the width of the prothorax, the fifth joint as wide as long; prothorax barely at all wider than long, the sides parallel and nearly straight in apical half, rounding slightly at apex, rather abruptly converging thence posteriorly, becoming sinuate to the tubulate base; punctures not very coarse, widely separated, becoming still smaller and notably closer medially, the median line unmodified; elytra three-fifths longer than wide, fully two-fifths wider than the prothorax, deeply but not very coarsely punctate, the punctures coalescent irregularly, leaving broad flat irregular interspaces, which are dull in lustre, also a flat and finely punctulate sutural margin, the raised lines obsolete, the innermost alone evident though not elevated; metasternal impression unusually large, elongate and deep, its median line finely cariniform. Length 16.0 mm.; width 5.3 mm. Male unknown. Washington State.....*basalis* n. sp.

Because of the multiplicity of species in North America, these, including *mexicana* of Bates, amounting so far as already known to eight, it is probable that the genus *Spondylis* originated in North America and extended to Eurasia in mid-Tertiary times by way of the Alaska-Siberia land connection.

I agree with LeConte that the position of *Spondylis*, near *Parandra* in a distinct family group, is far more rational than as a member of the Cerambycid series near *Asemum*, where it is placed by Bates; it is correctly placed in the recent European catalogue near *Parandra*, but in a simple tribal group of the Cerambycidae, which is indefensible. Some other of the aberrant Cerambycids of Lacordaire should also form distinct families of the Longicornia, such for example as *Hypocephalus*.

Family CERAMBYCIDÆ.

Subfamily PRIONINÆ.

Trichocnemis Lec.

This genus is distinct from *Ergates* and should be restored. The last joint of the maxillary palpi in *Ergates* is oval and more narrowly truncate at apex, while in *Trichocnemis* it is of a wholly different form, being broadly obtriangular, the sides straight and widely flaring from base to the truncate apex. In the former there is a prominent lateral spiniform tooth at basal third of the prothorax, wanting in the latter, and there are numerous other incongruities. The two genera are related tribally but are unquestionably distinct.

Trichocnemis neomexicana Csy., is a different species from *spiculata* Lec. The name *Ergates marmoratus*, though not appearing in the Zoological Record for 1890, was published for this species by Prof. T. D. A. Cockerell, but no diagnostic characters were given beyond the marmoration of the elytra, and, as there is no evidence that this may not occur occasionally in *spiculata*, it would seem that the application of the name *marmorata* is to some degree ambiguous and therefore in the nature of a *nomen in litteris*. The two names were published simultaneously so far as determinable from the record as I recall it now, and weighing all the evidence, it would seem that *neomexicana* is that which should prevail.

Tribe MALLODONTINI.

A general consistency of facies runs through the moderately numerous genera of this tribe, which, so far as known to me, may be defined briefly as follows:

Mandibles differing sexually, horizontal, more or less elongate and generally densely pubescent within in the males, small, arcuate and less pubescent in the female; body more or less depressed. 2

Mandibles similar in the sexes and deflexed, not pubescent within, the pronotal sculpture also nearly similar in the sexes, the body notably convex. 5

2—Posterior angles of the prothorax broadly oblique to the ante-basal tooth, not toothed at the basal margin; pronotum differing in the sexes, densely and finely punctured with polished and sharply limited impunctate areas in the male, smooth medially, more steeply declivous and roughly sculptured at the sides in the female; mandibles in the male long, very densely pilose within. . . . **Mallodon**

- Posterior angles of the prothorax obliquely sinuate, dentate at base as well as before the base; pronotum of the male not differing much from the female and without sharply defined smooth areas.....3
- 3—Inner margin of the met-episterna broadly sinuate throughout, mandibles much elongated in the male but less densely pilose within than in *Mallodon*.....**Nothopleurus**
- Inner margin of the met-episterna straight, the latter subparallel, with the sides not at all sinuate.....4
- 4—Mandibles very elongate in the male, the internal fringe of hairs less dense than in *Mallodon*, the maxillary palpi with a few stiff hairs; prosternum carinate except anteriorly:.....**Stenodontes**
- Mandibles not so elongate or widely separated in the male, irregular, tridentate and densely pilose within, the two submedian teeth united; maxillary palpi with regular marginal fringes of short hairs; prosternum not carinate.....***Aplagiognathus**
- 5—Prothorax at the sides and base nearly as in *Mallodon*, rounded at the base and with only an ante-basal tooth; tarsi widely dilated; prosternum not carinate.**Paramallus**

These genera, with the exception of *Mallodon*, are exclusively American and some of them, such as *Stenodontes*, rather restricted in habitat; they differ a good deal among themselves in general habitus, *Paramallus*, for example, with its very convex body and short pendant mandibles, being very different in appearance from *Mallodon*, with which LeConte united our representative species.

Mallodon Serv.

Besides the common *dasystoma* Say, my cabinet includes the two following species, represented at present only by the female:

Mallodon debile n. sp.—Female narrow, moderately convex, shining, castaneous; head very coarsely, deeply, irregularly foveato-punctate, with a fine striiform median line; antennæ piceo-castaneous, short, the first six joints extending barely to the base of the prothorax, the third joint twice as long as wide, the fifth but little longer; prothorax as in *dasystoma* but shorter and with the sides converging much more from base to apex, differing also in having the inner lateral ridge wholly obsolete; elytra four-fifths longer than wide, more convex than in *dasystoma* and differing in being ogivally narrowed behind from a little behind the middle, the combined apices very narrowly parabolic, finely, sparsely and obsoletely punctulate. Length 28.0 mm.; width 9.3 mm. Alabama.

Differs from the female of *dasystoma* in its narrower and more convex form, shorter antennæ, with shorter and less basally narrowed first joint, and in the form of the posterior parts of the elytra, but most decisively in the form of the fifth ventral segment, which in that species, is between three and four times as wide as long,

broadly rounded, with the apex in about a third the total width, becoming gradually transverse and fimbriate; in *debile* the fifth segment is only twice as wide as long, evenly trapezoidal in form, the rectilinearly truncate apex rather more than half the basal width and fimbriate with shorter hairs.

***Mallodon baroni** n. sp.—Female more elongate and parallel than the same sex of *dasystoma*, black, the elytra and entire hind body pale brownish-rufous, shining; head nearly as in *debile*; antennæ a little longer, extending to basal two-fifths of the elytra, the third joint much more than twice as long as wide; prothorax similar in general form, with the sides anteriorly converging and feebly arcuate throughout but less transverse, the lateral spines a little longer and that nearest the base more prominent; surface with a large minutely, sparsely punctate swelling at each side anteriorly from a little behind the middle, the intervening concavity strongly and loosely punctate and with a few coarser punctures on the posterior slopes of the swellings; laterally the surface is declivous, coarsely, densely punctato-rugose and duller, with an inner fine shining ridge and another, more lateral and oblique, from slightly before to slightly behind the middle; elytra a little more than twice as long as wide, a fourth wider than the prothorax, the sides parallel, very feebly arcuate and just visibly converging from well behind the middle to the obtuse apices, dehiscent in nearly apical half, the sutural spines well developed, very aciculate; surface obsoletely rugulose, with a broad shallow impression near each side from well behind the humeri, evanescent apically. Length 35.0 mm.; width 11.8 mm. Mexico (Guerrero),—Baron.

The type differs from the female of *dasystoma* in its narrower form, structure of the pronotum, coloration and in the form of the fifth ventral, which is here similarly transverse and broadly rounded, but with the apex becoming medially sinuate in about half the total width. *Spinibarbe* and *molarium* are much larger species, and it would seem not to be identical with *angustatum* Thoms., as the genæ are said by Bates to be obtusely tridentate in that species; in *baroni* the genæ are strongly and sharply angulate medially, with the angles at the base of the large angle, and forming the anterior limit of the nearly parallel sides of the genæ, only very slightly and obtusely prominent; so the language "obtusely tridentate" could not very well be construed to apply. The triangular median tooth at the apex of the genæ is relatively much larger than in either *dasystoma* or *debile*.

Nothopleurus Lac.

This genus is adopted by Bates, and apparently with ample justification, though rejected by LeConte. Three species are cited by the former author as composing the genus so far as known, of which *mandibularis* Harold, (= *gnatho* || Lec. and *dentiger* Cr.,—catalogue name) now stands in our lists under the genus *Mallodon*; the other species are the type, named *cbeninus* by Lacordaire, and *gnatho* White.

Stenodontes Serv.

The species of this genus are of large size, subdepressed form and strongly of the *Mallodon* type in general facies, but the mandibles are always acutely unidentate near the base internally, with the internal fringe less dense, the sides of the prothorax obliquely sinuate at base and denticulate at the extreme base as well as more anteriorly, with the surface subsimilar in the sexes and without the sharply defined male mirror-like areas of *Mallodon*, and, finally, the prosternum is carinate posteriorly, a character unknown in *Mallodon*. *Stenodontes* is exclusively West Indian in habitat. I have a considerable series from Cuba and one apparently collected in extreme southern Florida and recognize three very obvious species, of which the largest is apparently *chevrolati* Gahan., the male being 59 mm. in length, excluding the mandibles, which are 13 mm. long and the female 52 mm.; the male antennæ only extend to slightly behind the middle of the elytra, becoming rufescent, and are not almost as long as the body as stated of *damicornis* by Lacordaire. The two other species seem to be undescribed and may be known as follows:

****Stenodontes cubensis*** n. sp.—Male oblong-oval, broad, very moderately convex, polished and black throughout, the tarsi piscescent; head moderate, not closely, very irregularly punctate, coarsely across the vertex and more remotely thence to the base, finely on the epistoma and almost punctureless elsewhere, the median line broadly impressed except basally; antennæ very slender, extending to apical third of the elytra, black throughout, the apical joint about as long as the distance between the eyes; prothorax nearly as in *chevrolati* but relatively much smaller, shining, feebly and irregularly punctulate and uneven, being broadly convex sublaterally in apical two-thirds, with a depression behind the convexity, the sides steeply sloping and densely, coarsely punctato-rugose, with a shining ridge near the median elevated part, and between this and the sides, a very irregular elongate smooth spot, the margin with

short dentiform serrulation; elytra nearly two-thirds longer than wide, widest just before the middle, where they are fully a third wider than the prothorax, the sides converging behind the middle to the obtuse apices; surface smooth and almost punctureless, the sutural spines small. Female narrower than the male, with relatively still smaller head and prothorax, the usual small mandibles and longer elytra, the antennæ extending to the middle of the latter, which are twice as long as wide. Length (exclusive of the mandibles) (♂) 34.0–47.0, (♀) 41.0 mm.; width (♂) 13.6–19.3, (♀) 15.7 mm.; length of mandibles (♂) 4–8 mm. Cuba (Guantanamo and Havana),—Baker.

Differs in the male from *chevrolati* in the relatively much smaller head and prothorax, the latter in *chevrolati* being very nearly as wide as the elytra, and the mandibles are shorter, being barely as long as the prothorax in an apparently well developed male and more abruptly arcuate inwardly at apex; also in the more slender antennæ, the last joint in *chevrolati* being scarcely more than half as long as the width of the interocular surface. In the female the two species differ even more strikingly in ways similar to those relating to the males.

Stenodontes parallelus n. sp.—Male more parallel than in either *chevrolati* or *cubensis*, shining, the head blackish; prothorax blackish-castaneous, the elytra still paler and brownish-rufous; head sculptured nearly as in *cubensis* but with the coarse punctures across the vertex more confluent in a few depressed spots, those of the epistoma very fine and much more remote; antennæ dark red-brown, the basal joint more obscure, extending beyond the middle of the elytra, more tapering than in either of the preceding, becoming very slender apically; prothorax nearly as in *cubensis* but relatively larger and more transverse, a little more than twice as wide as long, the short dentition of the margins still feebler, very irregular and more like crenulation, the two spines limiting the posterior sinus distinct; elytra but very little wider than the prothorax, nearly two-thirds longer than wide, less narrowing behind the middle than in the two preceding, similarly sculptureless. Female wanting. Length (♂) 45.0 mm.; width 17.2 mm.; length of mandibles (♂) 7.0 mm. A single unlabeled example, probably from southern Florida.

Differs from *chevrolati* and *cubensis* in its more parallel form, more tapering antennæ and still more moderate mandibles, with the internal subbasal tooth not abruptly acute to subspiculiform as in those species, but broadly triangular; the small area of punctures behind each prominence of the pronotum is more densely and coarsely rugose; the head is in size and proportion much nearer *chevrolati* than *cubensis*. The Haitian *exsertus* Oliv. (*mandibularis*

Fabr.) I have not seen, but it probably does not occur in Cuba, most of the Coleopterous species of these two islands being different.

The subbasal internal mandibular tooth broadens out greatly in the shorter mandible of the less developed males, becomes more obtuse and occupies much more of the internal margin.

Aplagiognathus Thoms.

The chief characters of this genus as stated by Thomson (Ess. Class. Ceram., p. 320), are the moderate mandibles, which are subvertical in both sexes and the sides of the prothorax either multi-spinose or crenate and posteriorly dentate; some eight species were named by Lacordaire as belonging to the genus, or section of *Mallodon* as he preferred to regard it, forming a very heterogeneous mixture, beginning with *spinosus* Newm., which was adopted definitely as the type of *Aplagiognathus* by Thomson and including the female of *Mallodon dasystoma* Say, as well as *melanopus*, *cilipes* and other notably dissimilar forms of more northern distribution.

In the "Biologia," Mr. Bates describes an *Aplagiognathus* in the sense of Thomson as indicated by his chosen type, under the name *hybostoma*, which he states is closely allied to *spinosus*, and the figure portrays mandibles, short to be sure, though apparently not subvertical at all but virtually horizontal, and they are described as being "rufo-hirtis." The species described below under the name *guatemalensis* also has short male mandibles, which are however perfectly horizontal, thus contradicting the very etymology of the name *Aplagiognathus*, densely rufo-pilose within and, though not so irregular in shape, are subsimilarly dentate on the inner margin; although deficient in lateral thoracic spinules, it appears to be an *Aplagiognathus* in the sense understood by Bates. This interpretation of *Aplagiognathus*, however, leaves *Mallodon melanopus* and allied species unassigned generically, for they have a very convex form of body, hind parts of the prothorax as in *Mallodon* and strongly deflexed small nude mandibles, altogether similar in the sexes and not at all like those figured by Bates as pertaining to *Aplagiognathus hybostoma* and still less those of *guatemalensis*. These species are certainly not *Mallodon*, being very different in structure and appearance; neither do they seem at all appropriately placed with *Aplagiognathus spinosus*, *hybo-*

stoma or *guatemalensis*, and I have therefore proposed for them the genus named *Paramallus* in the tabular statement give above.

**Aplagiognathus guatemalensis* n. sp.—Male elongate, parallel, feebly convex and shining, blackish-castaneous throughout in color, the legs and antennæ black with a slightly piceous tinge; head extremely coarsely and densely punctato-rugose throughout, coarsely rufo-pilose apically, furrowed along the middle, the antennæ about attaining basal third of the elytra, slender, the basal joint coarsely punctate internally, third and fourth joints about twice as long as wide; mandibles stout, coarsely, not densely punctate, not quite as long as the width of the interocular surface, the upper line having rather less slope than that of the vertex and front and straight, feebly swollen near base, the exterior outline from above nearly straight, rounding inward slightly at base, the apex abruptly inflexed, conically aciculate and smooth, the internal teeth three in number, obtuse, the two anterior completely fused together, the tip obtusely bifid, the internal erect hairs abundant, stiff and pale red-brown; prothorax nearly twice as wide as long, the sides parallel, feebly arcuate and with many uneven, small and obtuse dentelures, obliquely sinuate and bidentate at base; surface very coarsely, densely punctato-rugose but with two large oblique median convexities polished and nearly impunctate, and a similarly shining and sparsely punctate transverse area at base; side slopes moderate, with a short tumid smooth line medially near the shining convexities; apical margin broadly sinuate, becoming still more deeply sinuate at the middle; elytra scarcely at all wider than the prothorax, twice as long as wide, parallel and feebly arcuate at the sides, obtuse at apex, the sutural angles not at all dentate or spinose; surface nearly smooth, minutely, sparsely punctulate, feebly impressed sublaterally from near basal third, evanescently so apically; two fine and subelevated lines on each are barely evident; anterior tibiæ with the outer distal angle acutely prominent but at some distance from the tip; met-episterna broad, parallel; tarsi moderately dilated, the third joint much more coarsely papillose beneath than the two basal joints; fifth ventral transverse, broadly rounded and densely, rufously fringed, becoming sinuato-truncate medially. Length (exclusive of the mandibles) 45.0 mm.; width 15.3 mm. Guatemala (Esquintla).

It is not at all certain that this species can be clearly associated with *spinosus* or *hybostoma*, because of the absence of the notably long, slender and aciculate spines along the lateral edges of the prothorax; but, if not, there is no other genus indicated in the "Biologia" that can receive it so far as discoverable.

Paramallus n. gen.

The type of this genus is the *Mallodon melanopus* Linn., of our lists. The reasons for separating it and its allies from *Aplagiognathus* have been given under that genus, and it requires only

the most casual observation to render evident the radical incongruity between these species and *Mallodon dasystoma*. Even should my interpretation of *Aplagiognathus*, through *guatemalensis*, prove incorrect, it is not possible that *Mallodon melanopus* can be generically associated with *Aplagiognathus hybostoma*, and so, in any event, the genus *Paramallus* is necessary and valid. *Melanopus* inhabits the southern Atlantic regions, while *cilipes* Say, is confined to Texas and neighboring parts, and the two are by no means specifically the same, *cilipes* being narrower in build, with shorter prothorax, much denser internal tibial fringes and more slender antennæ. In the female of *melanopus* the prothorax is much shorter and more transverse, the antennæ notably shorter and the metasternal median line much less deeply grooved than in the male; the fifth ventral is almost similarly sinuato-truncate medially at apex in both sexes, but is relatively wider in the female and almost without any of the dense pale reddish terminal fringes of the male; in the male of *cilipes* the metasternal groove is deeper than in the male of *melanopus*.

Serrulatus Lec., also belongs to this genus and the following is allied to *serrulatus*, being more elongate and rather less convex than *melanopus* or *cilipes*. These four are the only species now known to me as properly assignable to *Paramallus*.

Paramallus arizonicus n. sp.—Female very elongate, nearly parallel, convex, shining, moderately pale red-brown in color throughout; head extremely coarsely, confluent punctato-rugose, more sparsely toward base and more finely and confluent behind the eyes, the front furrowed, the furrow becoming a deep stria behind the line of the eyes; mandibles short, thick, arcuate, nude and densely punctate internally, sparsely and more coarsely on the outer surface, the inner margin with a small sub-basal tooth and a short broad projection beyond the middle, sinuate at its apex; genæ broadly but sharply angulate; antennæ not quite extending to basal fourth of the elytra, rather thick, not tapering distally; prothorax rather more than twice as wide as long, the sides rounding, even and scarcely at all reflexed from base anteriorly to the acute tooth at basal fourth, thence very feebly converging and slightly arcuate, with numerous small and finely aciculate, spiniform teeth to the apex; surface but slightly undulated, smooth, polished and finely, sparsely punctate, wholly impunctate broadly along the middle, the sides steeply but not abruptly declivous in lateral fifth, the lower part of the slope coarsely and confusedly punctato-rugose, the upper sparsely and irregularly punctate, with a more coarsely sculptured line feebly evident near the summit; elytra about two and one-half times as long as wide, slightly widest at the middle,

where they are about a fourth wider than the prothorax, parallel, with feebly arcuate sides and conjointly broadly subparabolic apex, each rounding internally, with the sutural angle obtuse and barely at all denticulate; surface finely, obsoletely punctato-rugulose, with the two raised discal lines evident; median line of the metasternum fine and but feebly impressed; met-episterna broad and parallel; anterior tibiæ with the everted external distal angle spiniform and apical. Length 42.0-47.0 mm.; width 13.8-16.0 mm. Arizona,—Levette.

The male is not at hand, but the species differs from *serrulatus* Lec., in the stronger and denser sculpture of the head, paler coloration and in having the serrulation of the sides of the prothorax composed of small but extremely acute spiniform teeth and not more nearly in the nature of crenulation, as it is in *serrulatus*. The length of *serrulatus* is given by Leconte as 2.3 inches or 57.5 mm.

Of the Mexican *Mallodonopsis corrosa* Bates, I have a single male example from Natá, Panama; it is apparently smaller than any known to the describer, being only 25 mm. in length and the elytra, having the three broad abbreviated furrows on each very distinct, are rather coarsely though shallowly and not closely punctate, scarcely "punctulate" as stated of the more typical *corrosa*. *Mallodonopsis* is placed in a different group from *Mallodon* and allies by Lacordaire, though differing principally in some rather inconstant crural characters.

Callipogon senex Dup., is before me in a good series of three males and four females, sent by Wittkügel and collected in Honduras. The most conspicuous variation among the males is in the form of the scutellum, which, in the large and fully developed examples, is very transverse; in a smaller specimen with short mandibles, the scutellum is barely wider than long. In the female there is some variation in sculpture, the elytra being smooth and dull in one example, but there is still more variety in the degree of narrowing of the prothorax from the post-medial angle to the apex, this being very pronounced in the example with smooth elytra. On the plate accompanying Nonfried's article on *Callipogon* (Berl. Ent. Zeit., 1892, p. 17 et seq.), a most remarkable mistake seems to have occurred, one in fact of extremely grotesque nature; for the head of his type of *friedländeri*, having become detached from the body had evidently been gummed in place upside down, and is not

only so figured but referred to in the text as an apparently natural phenomenon, making of *friedländeri* a very isolated species!*

Tribe DEROBRACHINI.

Orthosoma Serv.

The genus *Orthosoma* was widely separated from *Derobrachus* and placed in a different section of the Prioninæ by Lacordaire, but it is apparent that LeConte was more nearly correct in placing them together in this tribe, for Lacordaire himself admits that *Orthosoma* makes an exception among the genera with which it was associated, in the form of the met-episternum, this being as in *Derobrachus*. Our material in the genus has never been critically examined and it seems evident that we have more than a single species, however great the prevailing variability. The three forms in my collection which appear to be worthy of names may be outlined as follows from the female:

- Middle coxæ much more widely separated than the anterior; third antennal joint much longer than the fourth.....2
 Middle and anterior coxæ equally separated; elytra decidedly less elongate; third antennal joint but little longer than the fourth.....3
 2—Elytra fully two and one-half times as long as wide, parallel, with nearly straight sides, two-fifths wider than the prothorax, the latter short, very much more than twice as wide as long; eyes separated by but little more than half their own width; antennæ but just visibly tapering from the second joint. Male nearly similar but smaller, with the head small, the sides of the prothorax between the two anterior spines even or with a feeble obtuse projection. Length (♂) 26.0–30.0, (♀) 38.0 mm.; width (♂) 8.0–9.0, (♀) 11.7 mm. North-eastern America.....**brunnea** Forst.
 Elytra feebly dilated, parallel but with arcuate sides, scarcely more than twice as long as wide, widest rather behind the middle, where they are three-fourths wider than the prothorax, the latter less abbreviated, barely more than twice as wide as long; eyes separated by three-fifths their own width; antennæ much more tapering from the second joint, relatively much more slender distally. Male stouter than the male of *brunnea* but of nearly similar parallel and linear form, except that the head is relatively much larger and the sides of the prothorax, between the two anterior spines, have from one to three posteriorly oblique irregular and very acute spinules; fifth

* It may be that this matter is intended to be some sort of individual thrust at Mr. Friedländer, as it is difficult indeed to conceive of it as a serious scientific conclusion. The injection of personal feeling into zoological nomenclature is, however, an abhorrent idea that was roundly denounced by LeConte (Tr. Ann. Ent. Soc., 1874, p. 84) in alluding to the name "*staff*," imposed by Schauffuss on a species of *Pleocomma*.

ventral feebly sinuate medially at apex. Length (σ^7) 33.0, (φ) 39.0 mm.; width (σ^7) 10.0, (φ) 14.5 mm. Indiana,—Levette.

*ampli*ans n. sp.

- 3—Form more nearly as in the female of *ampli*ans, the elytra dilated, somewhat inflated and widest behind the middle, where they are two-thirds wider than the prothorax, scarcely twice as long as wide; prothorax narrower and less transverse than in *brunnea*, slightly more than twice as wide as long; head small, the eyes separated by three-fifths their width; antennæ sensibly tapering, relatively longer than in either of the preceding, extending fully to the middle of the elytra, the surface of the body more shining and less densely punctured. Male unknown. Length (φ) 34.0 mm.; width 11.8 mm. Long Island (Willels Point).....*spadix* n. sp.

The exact taxonomic relationship of these forms can only be determined by comparing large series, but they now seem to be specifically distinct. The numerous synonyms belong wholly to the very elongate and rectilinear form, described above as *brunnea*.

Tragosoma spiculum Csy., which is given as a synonym in the Henshaw list, is a species so distinct from any other that it could not fail to be instantly recognized; it does not resemble *harrisi* in any way, except in the general characters of the genus.

Tribe PRIONINI.

Our American genera of the tribe Prionini, as defined by LeConte, may be distinguished as follows:

Antennæ having the outer joints sculptured with a longitudinal reticulation of anastomosing raised lines, stout and imbricate (σ^7) or slender (φ); sides of the prothorax with two acute teeth and an acutely prominent to obtuse or rounded basal angle. [Type *P. coriarius* Linn.].....**Prionus**

Antennæ having the surface of the outer joints even and not reticulate with raised lines.....2

2—Sides of the prothorax as in *Prionus*; antennæ (σ^7) with the joints not sinuate beneath at their apices, 12-jointed; posterior tarsi distinctly shorter and broader than in *Prionus* and more scantily clothed beneath. [Type *Prionus palparis* Say].....**Prionina**

Sides of the prothorax rounded, without trace of teeth, except occasionally a small median denticle; antennæ (σ^7) formed as in *Prionus*, the joints deeply sinuate beneath at their apices or strongly bilobed, closely imbricate, 13- to 14-jointed; posterior tarsi as in *Prionus* but less padded beneath and with more evident long hairs intermingled. [Type *Prionus emarginatus* Say].....**Homæsthesis**

Prionus is very widely distributed but the last two genera seem to be confined to the Rocky Mountain districts.

Prionus Geoff.

A study of the American species of this genus, which with the Prioninæ in general are very much more developed and diversified than in the palæarctic fauna, reveals an unanticipated variety of structure, which renders a satisfactory taxonomic arrangement of them much less difficult than is usually assumed. The species and subspecies are numerous and can be segregated into the three following very evident subgeneric groups:

Antennæ 12-jointed in both sexes, imbricate (♂) or slender and serrate (♀), the serratures on the inner sides of the apices of the joints.

Group I

Antennæ (♂) having from about 14 to about 19 joints, usually with one or two less in the female than in the male, the joints, except the terminal, formed in both sexes nearly as in group I. Group II

Antennæ (♂) with 28 to 32 joints, very stout, closely imbricated and greatly developed, or (♀) much shorter and slender, having notably fewer joints and with the outer joints short, transverse and not asymmetric as in the two preceding groups but bilaterally symmetric.

Group III

The first group is distributed abundantly from the Atlantic to the Pacific, but apparently does not extend far into Mexico; the second extends from the Atlantic to the Sonoran regions but does not enter the true Pacific fauna, while the third, generally rare in individuals and apparently comprising but few species, is confined to Texas and adjacent regions.

Group I.

Prionus in sp.

The very numerous species and subspecies of this group may be distinguished by the following structural characters:

Eyes with a very large emargination which extends more or less nearly half way through them, the inner part of the eyes less full or shorter antero-posteriorly, the head generally larger, frequently swollen behind the eyes; color black or blackish as a rule, the metasternal pubescence less developed or wanting medially, especially in the female; male usually much smaller than the female. 2

Eyes with a relatively smaller and shallower emargination, which never extends so deeply, the inner part of the eyes fuller; head never notably swollen at base; color never black; metasternum always pubescent throughout in both sexes. 11

2—Antennal joints (♂) only very feebly or barely at all sinuate at their apices beneath; body more oblong, very obtuse behind, the pro-

- thorax usually nearly as wide as the elytra, very transverse, more parallel or with feebler medial lateral tooth, the elytra strongly sculptured. Atlantic regions.....3
- Antennal joints (♂) deeply sinuate beneath at tip, the prothorax generally narrower and with much more pronounced medial tooth at the sides; elytra more oval, generally less obtuse behind, less strongly or deeply sculptured though sometimes partially rugose; species including the largest of the genus. Sonoran regions.....5
- 3—Elytral punctures coarse and deeply impressed but everywhere separated, generally by nearly twice their diameters; posterior tibiæ (♀) not concave on their lower face except feebly toward base. Oblong, parallel, rather shining, glabrous, pale testaceous, the elytra more yellowish than the anterior parts; head rather small, but little more than half as wide as the prothorax, not as wide at base as across the rather convex eyes, which are separated by nearly a fourth more than their own width (viewed vertically), the surface smooth, finely, sparsely punctured, with a moderately impressed striiform and entire canaliculation; last joint of the maxillary palpi not quite so long as the preceding; antennæ slender, unusually short, scarcely more than half as long as the elytra, slightly compressed, parallel or very feebly tapering apically, the basal joint stout, the last joint less than twice as long as wide and a little shorter and narrower than the eleventh; prothorax and elytra nearly as in *laticollis* (♀), the former differing in having the anterior tooth obtuse and blunt, scarcely evident, the latter more elongate, parallel, very feebly arcuate at the sides, just visibly wider than the prothorax, almost twice as long as wide and with feeble discal ridges. Length (♀) 26.0 mm.; width 11.0 mm. New York (Adirondack Mts.)—J. F. Kemp.....*kempi* n. sp.
- Elytral punctures apparently as in the preceding, also similar in the very transverse and widely separated eyes, obtuse or rounded anterior thoracic teeth and short antennæ but very much larger in size; color piceous, shining; prothorax very transverse, broadly bisinuate at base, the surface very smooth, the basal teeth obtuse, the intermediate broadly prominent; elytra slightly wider than the prothorax; antennæ (♀) slightly longer than the head and prothorax, serrate toward tip; male unknown. Length 1.65 inch (41.25 mm.). Georgia. [*P. curticornis* Lec.—Journ. Acad. Phil., ser. 2, II, p. 109].
curticornis Lec.
- Elytral punctures unevenly coalescent, with the sculpture deeply vermiculato-rugose; hind tibiæ concave throughout, more feebly and less asperately punctate in the female as usual.....4
- 4—Prothorax in both sexes very nearly as wide as the elytra, very transverse, almost as wide at base as at apex; elytra narrowed but little apically, each with three very feeble raised discal threads, the lateral obsolescent; color black, the elytra feebly brunnescent in the female; head (♂) well developed, rather more than three-fifths as wide as the prothorax, strongly and closely punctured, with two smooth elevated spaces and impressed median line as usual, the eyes separated by rather more than their own width, the tempora

not quite so prominent as the eyes, or (♀) very large, nearly two-thirds as wide as the prothorax, smoother and less punctate, strongly swollen at base, the tempora more prominent than the eyes, which are less convex than in the male, the eyes separated by two-fifths more than their own width; elytra (♀) nearly three-fifths longer than wide. Length (♂) 27.0–30.0, (♀) 33.0–39.0 mm.; width (♂) 11.0–12.0, (♀) 15.0–18.0 mm. Northern New York and New England to District of Columbia. [*P. laticollis* Drury,—Ill. II, 1773, Ind.; I, p. 83; *brevicornis* Fabr.,—Syst. El. II, p. 260; LeConte,—Journ. Acad. Phila., 2nd ser., II, p. 109].....***laticollis*** Drury

A—Similar to *laticollis*, except that the head (♂) is less developed, not quite three-fifths as wide as the prothorax, with the eyes separated by evidently less than their own width, or (♀) not quite so large, rather more than three-fifths as wide as the prothorax, the eyes separated by but little more than their own width, the tempora parallel, nearly straight and equally prominent as the eyes, the elytra (♀) notably shorter than in *laticollis* and not entirely covering the abdomen, barely one-half longer than wide. Length (♂) 21.5–25.0, (♀) 30.0–38.0 mm.; width (♂) 9.5–10.7, (♀) 14.0–16.0 mm. The length as in all the other species of *Prionus* being measured from the apex of the mandibles to the end of the elytra. Indiana,—Levette.....***oblongus*** n. subsp.

Prothorax much narrower than the elytra, distinctly narrower at base than at apex; elytra much narrowed from base to apex. General color and sculpture throughout as in *laticollis*; head, prothorax and elytra increasing progressively and almost uniformly in width, the first two-thirds as wide as the prothorax, the eyes convex, separated by about two-thirds their width, the tempora much less prominent and feebly converging to the base; antennæ nearly similar but shorter and apically more slender; prothorax very much smaller, very short, about three-fourths as wide as the elytra, as in *laticollis* except that the sides behind the medial teeth rapidly converge to the base, the basal angles much more than right but with their apices more acute and prominent than in *laticollis*; elytra narrower and tapering, with more arcuate sides, the apex much less broadly obtuse. Length (♂) 19.8 mm.; width 8.7 mm. A single specimen of unknown origin and unindicated locality.....***parvus*** n. sp.

5—Hind angles of the prothorax wholly obliterated, very broadly and evenly rounded. Body very stout, convex, the pronotum not much more so than the elytra, black, slightly picescent posteriorly and beneath, the abdomen testaceous throughout, head very large, fully three-fourths as wide as the prothorax, the eyes scarcely at all convex, the tempora parallel, feebly arcuate, slightly swollen beyond the eyes, the latter separated by a little less than their own width; antennæ black, very stout basally, rather rapidly tapering and feebly picescent distally, the last joint a little longer than the preceding, almost four times as long as wide, widest near tip, its inner face oblique in more than apical fourth; prothorax a little more than twice as wide as long, rather strongly but sparsely, irregularly punctate, the median tooth rather strong, very acute and slightly reflexed;

scutellum wider than long, parabolic; elytra at base about a fourth wider than the prothorax, the sides thence but very feebly converging to the broadly rounded apices, rather loosely punctate, very finely externally, more coarsely and irregularly toward the suture, the raised lines barely traceable, three-fifths longer than wide; metasternum with coarse luteous-yellow pubescence throughout, somewhat sparser in a small central area; tarsi stout, the pads of the posterior finely sulcate, those of the middle tarsi entire, the sulcus barely traceable. Length (♂) 46.0 mm.; width 19.7 mm.; width of head 10.0 mm. A single example without indication of locality.

validiceps n. sp.

Hind angles of the prothorax acute, sometimes slightly prominent and dentiform as usual. 6

6—Hind angles obliquely truncate, so that the posterior denticle is obviously in front of the line of the base; median tooth very stout, its anterior slope making an angle of about 45° with the line of the base. 7

Hind angles not obliquely truncate, the posterior denticle about in the prolongation of the line of the base, with which the anterior slope of the much longer and more acute median tooth makes an angle which is very much less than 45° 9

Hind angles obliquely truncate as in 7, but with the middle teeth slender and abrupt in formation or spiniform as in the *californicus* group. . 10

7—Prothorax large, very convex, with the base strongly arcuate medially; body large and very stout, convex, strongly shining, black, the legs and abdomen blackish-castaneous; head moderately large, very slightly swollen basally beyond the scarcely convex eyes, which are separated by slightly more than their own width; antennæ (♀) piceous-black, the last joint shorter than the preceding, oval, twice as long as wide; prothorax barely at all more than twice as wide as long, polished, with rather numerous small but deep punctures and several large impunctate areas, the median teeth very acute, turned upward outwardly and distinctly reflexed or hamate, their anterior slope biprotuberant; anterior angles oblique, the apical tooth distinctly behind their anterior limit; scutellum large, almost circularly rounded, barely impressed along the middle; elytra at base a fifth wider than the prothorax, three-fifths longer than wide, the sides rather strongly, evenly arcuate, narrowing a good deal toward the somewhat narrowly rounded apices, the raised lines barely traceable, the punctures sparse, rather small, becoming coarser and rugulose near the suture behind the middle but not at tip, the sutural angles evident though but slightly dentate; tarsi not notably stout, the posterior finely, deeply canaliculate beneath, the intermediate canaliculate basally but scarcely at all thence through the third joint; anterior and middle femora strongly compressed; metasternum glabrous, very finely, not densely punctulate and slightly pubescent laterally. Length (♀) 49.0 mm.; width 21.0 mm.; width of head 9.0 mm.; length of prothorax 9.0 mm. New Mexico (Fort Wingate),—Shufeldt. **tumidus** n. sp.

Prothorax and other general characters as in *tumidus* but larger, not quite so black, the abdomen pale testaceous with a narrow apical border on all the segments deep black; surface very highly polished; head larger, rather strongly swollen basally beyond the eyes, which are separated by very much more than their own width; antennæ (♀) with the last joint much longer, fully as long as the preceding and three times as long as wide; prothorax nearly similar, except that the very large and prominent, finely acute and scarcely at all reflexed median teeth are horizontal in plane, their anterior slope very obtusely unidentate; scutellum nearly similar but more deeply canalliculate; elytra nearly similar but much more dehiscent behind the middle, still more finely and very sparsely punctate, with the three raised lines very fine and feeble though evident; inferior groove of the hind tarsi becoming very broad on the basal joint, distinct through the first three joints of the intermediate; anterior and middle femora scarcely at all compressed; punctulation toward the sides of the metasternum much finer and denser. Length (♀) 56.0 mm.; width 22.0 mm.; width of head 10.4 mm.; length of prothorax 9.0 mm. Arizona (locality not specified).....*vastus* n. sp.

Prothorax very much shorter and less convex, being as usual throughout the genus in these respects.....8

8—Color black, the upper surface shining throughout. Body intense black above and beneath (♂), or picescent beneath (♀), moderately stout; head about as wide at base as across the eyes, the latter separated by a little less (♂) to sensibly more (♀) than their own width; antennæ as usual in form, deep black, with the last joint not quite as long as the preceding, nearly four times as long as wide, with the inner face beveled apically (♂), or piceous-black, with the last joint shorter than the preceding, a little more than twice as long as wide, less compressed, more oval and not beveled apically (♀); prothorax very much more than twice as wide as long, with rather small but deep, sparse and irregularly distributed punctures, the anterior slope of the middle teeth not modified, straight; scutellum very broadly rounded at apex; elytra a fourth to a fifth wider than the prothorax, with the humeral angles only feebly tumid, the sides rather rapidly converging and broadly arcuate thence to the somewhat narrowly rounded apices, three-fourths longer than wide, the raised lines very feeble, obsolescent in the female, the punctures rather strong, moderately close, everywhere widely separated, the surface sometimes becoming feebly rugose medially toward base (♀); metasternum pubescent throughout (♂), or very minutely, not densely punctulate and finely pubescent toward the sides only (♀); middle and hind tarsi canaliculate throughout in both sexes, the channel not much wider on the first joint; male very much smaller than the female. Length (♂) 29.0, (♀) 46.0–47.0 mm.; width (♂) 11.8, (♀) 18.0–18.2 mm.; length of prothorax (♀) 6.25 mm.; width of head (♀) 8.3–8.8 mm. New Mexico (Jemez Springs),—Woodgate.

tristis n. sp.

Color very dark castaneous, the elytra strongly alutaceous in lustre. Body narrower in form, with relatively much larger head, the under

surface black, the abdomen entirely pale testaceous; head fully two-thirds as wide as the prothorax, the parallel and scarcely arcuate tempora about as prominent as the eyes, which are rather convex and separated by nearly their own width, the antennæ dark castaneous, very stout basally, well developed, the last joint (♂) four times as long as wide, very gently beveled apically, with a central pit at the summit of the slope and fully as long as the preceding; prothorax short, much more than twice as wide as long, broadly sinuate at apex, feebly arcuate at base, the median tooth very acute, hamate, the sides of the apex anteriorly prominent but rounded, thence posteriorly oblique and straight to the apex of the acute anterior teeth; punctures sparse but rather strong; scutellum very obtuse; elytra fully a fourth wider than the prothorax, the sides rather strongly converging and unusually feebly arcuate to the obtusely rounded apex, the raised lines almost obsolete, the punctures fine but deep, everywhere widely separated; close coarse pubescence of the metasternum sparse at the centre, the hind tarsi with a rather narrow but deep and even canaliculation throughout, represented on the middle tarsi by a very fine and barely visible stria. Length (♂) 43.0 mm.; width 15.8 mm.; length of prothorax 5.7 mm.; width of head 8.3 mm. Arizona,—Levette (locality unrecorded).....**alutaceus** n. sp.

- 9—Body oblong, subparallel, rather depressed, deep black throughout, the abdominal segments dark testaceous, black basally; surface shining; head rather small, but little more than half as wide as the prothorax, the tempora parallel, about as prominent as the eyes, which are somewhat convex and separated by barely more than their own width, the median sulcus of the front unusually large and deep; antennæ (♀) deep black, except very near the apex, the last joint rather small, but little more than twice as long as wide and much shorter than the preceding, parallel; prothorax short, two and one-half times as wide as long, very finely, sparsely and irregularly punctate, the middle teeth unusually long, very acute, barely at all recurved, the apex throughout nearly as in the preceding; scutellum very obtuse; elytra barely three-fifths longer than wide, about a fifth wider than the prothorax, the sides nearly straight and subparallel, arcuate and converging in about apical third, rugosely but not strongly or densely sculptured, the two inner raised lines distinct; metasternum and tarsi as in *tristis*, except that the second joint of the hind tarsi is much more rapidly narrowed from apex to base, the canaliculation conspicuous and equally distinct on the middle and posterior. Length (♀) 43.0 mm.; width 17.0 mm.; length of prothorax 6.0 mm.; width of head 7.4 mm. New Mexico (Jemez Springs),—Woodgate.....**tetricus** n. sp.

- 10—Form stout, oblong, subparallel, convex, shining, rather pale rufocastaneous throughout, the head blackish, the prothorax nearly so; head large, the parallel tempora swollen and more prominent than the eyes, which are separated by a little more than their width; antennæ (♀) unusually slender, the outer joints narrower and less serrate than in any other species, the last joint fully three times as

long as wide and a little longer than the preceding; prothorax not very short, only slightly more than twice as wide as long, finely but deeply, sparsely and very unevenly punctate, the apical teeth acute, the sides of the apex prominent and oblique before them, the middle teeth very slender but not long, the base broadly rounded medially; scutellum very broadly obtuse; elytra about a fourth wider than the prothorax, subparallel, very obtusely rounded at apex, only one-half longer than wide, finely, sparsely punctate throughout, not at all rugose, the two inner raised lines rather strong; metasternum very finely but closely punctulate toward the sides; tarsi more slender than usual, the canaliculation very fine but entire and similar on the middle and posterior soles. Length (♀) 40.0 mm.; width 16.2 mm.; length of prothorax 6.4 mm.; width of head 7.8 mm. Colorado, —Levette (locality unrecorded).....**solidus** n. sp.

- 11—Antennæ (♂) but moderately and very gradually enlarged toward base, the joints not or scarcely at all sinuate beneath at tip; elytral punctures rather large and sparse but deep and perforate, not impressed. Atlantic regions.....12

Antennæ (♂) very stout toward base, with the joints deeply sinuate beneath at their apices; elytral punctures not so coarse as a rule and always impressed, not perforate.....13

- 12—Form much elongated, shining, piceous to tawny-yellow, the head and, to a less degree, the prothorax, darker; head very moderate or rather small in size, much narrower at the tempora than across the eyes, which are larger and more convex than in any other species and with an unusually small emargination, separated by barely one-half their width in both sexes; antennæ (♂) extending to apical fifth of the elytra, the anastomosing lines unusually strong, the last joint obliquely truncate beneath at base, or (♀) slender, extending to the middle of the elytra, with the last joint much shorter and narrower than the preceding; prothorax very transverse, moderately bisinuate at base, rather prominent but broadly rounded at the sides of the transverse apex, thence obliquely rounded to the apex of the acute anterior teeth, the middle tooth short, acute, hamate, much nearer the anterior than in any other species, the hind angles right, blunt, not at all prominent; surface with numerous small but strong punctures; scutellum moderate, more or less angulate; elytra long, very nearly twice as long as wide, about a fourth wider than the prothorax, obtuse at tip, subparallel, with broadly arcuate sides, the raised lines subobsolete; metasternum throughout with rather long dense pubescence (♂), or finely and closely punctulate, with short inconspicuous pubescence, becoming obsolete medially (♀); tarsi (♀) slender, the groove becoming obsolete on the third joint of the posterior and visible only toward base of the first joint of the intermediate. Length (♂) 27.0–29.0, (♀) 36.5–42.0 mm.; width (♂) 10.6–11.0, (♀) 14.0–16.5 mm.; extreme length and width of prothorax (♀) 5.8×13.4 mm. Middle Atlantic states to Florida, also Indiana. Abundant. [*P. pocularis* Dalman,—Sch., Syn. Ins., I, 3, 1817; *P. lævigatus* Harris,—Tr. Nat. Hist. Soc. Hartford, 83].
pocularis Dalm.

A—Similar but still more elongate, with narrower and less transverse prothorax, less approximate eyes and still smaller head, the scutellum larger, broader and more rounded; eyes separated by two-thirds their own width; elytra fully twice as long as wide; tarsi similar. Length (♀) 41.0 mm.; width 16.0 mm.; length and width of the prothorax 6.0×12.3 mm. Locality unrecorded.

prolixus n. subsp.

Form much stouter, larger, black, the elytra rather abruptly dull rufous in apical two-thirds; head more developed, two-thirds as wide as the prothorax, the eyes separated by three-fourths their width, the mandibles notably larger and thicker; antennæ much shorter, scarcely extending to basal third of the elytra, the last joint as long as the preceding but narrower; prothorax relatively much narrower and less transverse though similar otherwise, the scutellum similar; elytra much broader, with the arcuate sides more narrowly rounding behind, nearly two-fifths wider than the prothorax, two-thirds longer than wide; tarsi and metasternum similar; body beneath black, the abdomen red. Length (♀) 47.0 mm.; width 18.0 mm.; length and width of prothorax 6.7×12.5 mm. Indiana.

bicolor n. sp.

13—Species of the Atlantic regions. Body rufo-piceous in color, shining, the prothorax sparsely punctulate, transverse though less so than in *pocularis*, scarcely more than twice as wide as long, strongly bisinuate at base, the lateral teeth rather prominent, the posterior angles right; elytra wider than the prothorax, coarsely punctate, the raised lines obsolescent; antennæ (♂) slightly shorter than the body, stout, imbricate, the joints obliquely sinuate, prominent internally. Length 35.0 mm. Georgia.....**obliquicornis** Lec.

Species of the Sonoran and Pacific regions.....14

14—Last antennal joint normal, not at all appendiculate.....15

Last antennal joint (♂) extremely long, slender, sometimes appendiculate.....22

15—Apical margin of the prothorax transverse, not or scarcely at all sinuate, the finely pointed apical teeth projecting without sensible obliquity and nearly in line with the apical margin; basal angles prominent and acute, obliquely truncate postero-externally.....16

Apical margin broadly but sensibly sinuate, anteriorly prominent at the sides and thence posteriorly oblique to the apex of the anterior teeth.....19

16—Head and prothorax relatively unusually developed for this group; body large, rather stout and convex, subparallel, the sides of the elytra converging slightly behind to the rather broadly rounded apices; color piceo-castaneous throughout, rather shining; head almost half as wide as the elytral base, the tempora but feebly converging behind the rather feebly convex eyes, which are separated by three-fourths their width, large, with very moderate emargination; antennæ (♂) very stout and imbricate basally, two-thirds as long as the body, the last joint fully as long as the preceding but narrower, four times as long as wide, with straight and parallel sides in apical half, the lower side thence oblique and straight to

the base; prothorax strongly transverse, four-fifths as wide as the elytra, the median teeth very stout, rapidly finely acuminate and notably reflexed or hamate; punctures numerous, fine but deep; scutellum broadly angulate at tip; elytra two-thirds longer than wide, finely but strongly, rather sparsely punctate, the two inner raised lines feeble; sides of the apical abdominal sinus (♂) tumid on the surface; tarsi unusually stout. Length (♂) 47.0 mm.; width 18.2 mm.; length and width of prothorax 6.2×15.0 mm.; width of head 8.2 mm. Texas (El Paso),—Dunn. [*P. curvatus* Lec.,—Col. of Kansas and East. N. M., 1859, p. 19,—Santa Fé]. **curvatus** Lec.

Head and prothorax smaller, the latter similarly very transverse. 17
17—Lateral teeth of the prothorax long, very slender and spiculiform.

Body large, very stout, rufo-castaneous, the head and prothorax piceous-black, convex, shining; head moderate, nearly as in *curvatus*; antennæ (♀) slender, three-fifths as long as the body, the last joint more than three times as long as wide, distinctly longer than the preceding, the inner face beveled at tip and with a small pit at the summit of the bevel; eyes separated by three-fourths their width; prothorax more convex than in the others of this group and with more numerous and stronger punctures, the long and very slender anterior and middle teeth not or scarcely at all reflexed; scutellum large, very obtuse; elytra three-fifths longer than wide, a third wider than the prothorax, tapering but feebly, the apices broadly rounded, the marginal impression just behind the humeri unusually developed, the two inner raised lines very feeble; punctures fine and everywhere sparse; tarsi rather slender, the canaliculation deep and distinct on the two posterior pairs. Length (♀) 47.0 mm.; width 20.0 mm.; length and width of prothorax (as here uniformly measured from the apices of the middle teeth) 6.6×15.7 mm.; width of head 8.2 mm. Arizona (Grand Cañon of the Colorado),—T. Mitchell Prudden **spiculosus** n. sp.

Lateral teeth acute and finely pointed but shorter and not spiculiform. . 18

18—Form moderately stout, convex, rather shining, piceous-black to dark castaneous, the head (♂) nearly as in *curvatus* but not quite so large, or (♀) notably small, the eyes nearly as in that species, the antennæ (♂) not quite so stout basally, the last joint evenly elongate-oval, three times as long as wide and very much shorter than the preceding, or (♀) unusually slender, but feebly serrate distally, with the last joint as in the male though only a little more than twice as long as wide, unmodified on the inner face and much shorter than the preceding; prothorax nearly as in *spiculosus* in general form, rather strongly punctate; scutellum very obtuse; elytra two-thirds (♂) to four-fifths (♀) longer than wide, the punctures rather small and sparse but strong and conspicuously impressed; tarsi rather slender, canaliculate as in *spiculosus*; surface at the ends of the apical abdominal sinus (♂) not tumid as in *curvatus*. Length (♂) 35.0–39.5, (♀) 37.0–43.0 mm.; width (♂) 14.5–16.2, (♀) 13.8–17.0 mm.; length and width of prothorax (♂, ♀) 5.5×10.0 mm.; width of head (♂) 6.8–7.5, (♀) 6.0–6.8 mm. Colorado (Boulder Co.). Abundant. **consors** n. sp.

A—Similar to *consors* but slightly less convex and with more parallel elytra, the eyes similar, the antennæ (♀) longer, stouter and more strongly serrate, nearly three-fifths as long as the body, the last joint similar but very nearly as long as the preceding, feebly beveled on the inner side in apical two-fifths, with a small pit at the summit of the bevel; prothorax similar but with the median teeth rather more reflexed; scutellum similarly very obtusely and broadly rounded; elytral punctures much less distinct, being very fine, feeble and everywhere remote, the fine raised lines rather more distinct; tarsi similar in structure but notably stouter. Length (♀) 46.0 mm.; width 16.5 mm.. New Mexico (Jemez Springs),—Woodgate.....**acomanus** n. subsp.

B—Similar to *acomanus* but with a still smaller head and rather less widely separated eyes, the antennæ not so long, notably more slender and less serrate, nearly as in *consors* but still more slender, the last joint (♀) only about twice as long as wide, not beveled apically and without trace of pit, much shorter than the preceding joint; prothorax throughout as in *consors* but more finely and less strongly punctate; scutellum differing from either of the two preceding in being fully as long as wide and narrowly and evenly parabolic in form; elytra paler testaceous, otherwise as in *acomanus* in form and punctuation, the raised lines still more distinct; tarsi as in *consors*, more slender than in *acomanus*. Length (♀) 40.0 mm.; width 15.5 mm. New Mexico (Fort Wingate),—Shufeldt.....**proximans** n. subsp.

Form much more slender and small in size, pale testaceous in color, strongly shining; head small, the eyes separated by less than three-fifths their width, the ocular width much greater than the temporal; antennæ (♂) red-brown, moderately stout basally, gradually finely tapering distally, extending to apical fifth of the elytra, the last joint very long and slender, fully five times as long as wide, parallel, as long as the preceding but much narrower, truncate at apex, not beveled apically; prothorax unusually small, short and transverse, nearly as in *consors* but still shorter and more finely and sparsely punctate; scutellum moderate, obtusely rounded; elytra rather rapidly tapering from base to apex, with but very feebly arcuate sides, the apices rather narrowly rounded, more than three-fourths longer than wide and more than a third wider than the prothorax; punctures rather large, deeply impressed, conspicuous though widely, very unevenly separated; abdomen unusually slender and tapering, the apical sinus simple; tarsi slender, especially the posterior as usual. Length (♂) 31.0 mm.; width 11.0 mm.; length and width of prothorax 3.8×8.5 mm. Arizona (Cañon of the Colorado River),—Prudden.....**angustulus** n. sp.

19—Hind angles of the prothorax obliquely and sinuously truncate, acutely prominent externally and anterior to the line of the base.. 20

Hind angles not oblique, right, rather blunt and in line with the basal margin..... 21

20—Emargination of the eyes small; antennal tubercles moderate;

elytral punctures fine, unusually close-set. Body moderately stout (♂), or notably so and very much larger (♀), moderately shining, pale testaceous in color, the anterior parts somewhat darker; head moderate or relatively small, the eyes separated by three-fourths their width in both sexes; antennæ (♂) very stout and imbricate basally, slender apically, extending to apical fourth of the elytra, the last joint very long, as long as the preceding, nearly five times as long as wide, much compressed, rounded at apex, subclaviform or gradually wider from base to the apical arcuation, the apical bevel on the inner side very feeble and long, its summit feebly protuberant, or (♀) slender, perceptibly tapering and strongly serrate distally, barely half as long as the body, the last joint parallel, three times as long as wide, as long as the preceding, truncate at apex, less compressed than in the male, the apical slope on the inner face very gentle and beginning behind the middle; prothorax transverse, rather strongly punctured, closely and rugosely so laterally, the anterior teeth small, the intermediate large, very acute and somewhat reflexed as a rule; scutellum very obtuse; elytra a third wider than the prothorax, about two-thirds longer than wide in both sexes, the feebly arcuate sides much more rapidly converging from base to apex in the male than in the female, the raised lines very feeble; metasternal pubescence greatly developed in both sexes but especially in the male; tarsi only moderately slender, the canalication fine but distinct and entire on the middle and posterior. Length (♂) 38.0, (♀) 53.0 mm.; width (♂) 14.0, (♀) 21.4 mm. California and Oregon. [*P. californicus* Mots.,—Bull. Mosc., 1845, I, p. 89; *P. crassicornis* Lec.,—Journ. Ac. Phila., ser. 2, II, 1852, p. 108].....**californicus** Mots.

A—Smaller than the preceding and much more parallel in the male, the elytra only very feebly narrowing behind and more broadly rounded at apex; color, sculpture and general features similar; head relatively much smaller, the eyes less separated, distant by one-half their width; antennæ (♂) not quite so stout basally but otherwise similar, the last joint very slender and compressed, five times as long as wide, parallel, not inflated apically and not at all modified on the inner face; tarsi notably more slender than in *californicus*. Length (♂) 31.5 mm.; width 12.4 mm. California (locality not recorded).....**ineptus** n. subsp.

B—Very much smaller than *californicus* but similar in its pale testaceous color, only the head being darker however, shining, convex; head similar, the eyes separated by two-thirds their width; antennæ (♀) about half as long as the body, very slender, the outer joints but slightly serrate, the last evenly oval, about as long as the preceding but only twice as long as wide; prothorax as in the two preceding though much more finely, sparsely and less conspicuously punctate; scutellum broad, very obtuse; elytra three-fifths longer than wide, finely, closely punctate; tarsi long, as in *californicus* but rather more slender, the intermediate barely at all less slender than the posterior and not decidedly so as is

the case in *californicus*. Length (♀) 34.0 mm.; width 14.4 mm.

Arizona (probably western).....**punctulatus** n. subsp.

Emargination of the eyes very deep, extending almost half way through; antennal tubercles very prominent, separated by a remarkably deep sulcus; punctures of the elytra very fine and everywhere remote. Body only moderately stout, convex, shining, pale piceo-testaceous; head moderate, the eyes large and very convex, separated by less than half their width; antennæ (♂) only extending about three-fifths from the elytral base, stout basally, moderately attenuated and strongly compressed distally, the last joint as long as the preceding, four times as long as wide, rounded at tip, parallel, the lower margin becoming oblique in less than basal half to the base, the lower face sloping rapidly in a little more than apical fourth, its upper limit well marked and with a shallow pit; prothorax as in *californicus* though slightly less transverse, strongly but loosely punctured; scutellum very obtuse; elytra two-thirds longer than wide, a third wider than the prothorax, rather tapering and with broadly arcuate sides from base to apex, the raised lines barely traceable; metasternum less pubescent than in *californicus*, the tarsi similar but with a much wider glabrous sulcus beneath. Length (♂) 40.0 mm.; width 15.7 mm. Arizona (locality unrecorded).

fissifrons n. sp.

21—Form shorter and stouter than in any of the preceding and darker in color, blackish-piceous throughout, moderately shining, the elytral punctures larger, deeper and more conspicuous than in any other of this section though not as close-set as in *californicus*; head rather small; eyes large, with shallow emargination, separated by three-fifths their width; antennæ (♂) very stout and imbricate basally, only moderately tapering and rather compressed distally, extending to apical third of the elytra, the last joint parallel, elongate-oval, rather longer than the preceding, almost four times as long as wide, the apical slope of the inner face rather pointed posteriorly, ending above the median line and much less than half as long as the joint; prothorax much wider than in the *californicus* group preceding, strongly transverse, nearly similar in general form and sculpture, except that the median and anterior teeth are much more equal in size; scutellum short and very broadly obtuse; elytra not quite three-fifths longer than wide, only about a fifth wider than the prothorax, gradually feebly tapering, with distinctly arcuate sides, from base to the obtusely rounded apex, the raised lines rather strong; metasternum conspicuously pubescent; tarsi rather thick, the sulci entire, broad on the posterior, fine on the intermediate. Length (♂) 35.5 mm.; width 14.0 mm. Texas (near El Paso),—Dunn.....**texanus** n. sp.

22—Body somewhat stout and convex, oblong-suboval, rather shining, blackish-piceous in color, the abdomen pale luteo-flavate; head rather small, the eyes less developed internally than in the preceding section and with a noticeably large emargination extending two-fifths through, separated by less than three-fifths their width; antennæ (♂) moderately stout basally, long, very gradually slender

and tapering distally, extending to apical fifth of the elytra, the last joint serriform, nearly like the preceding and about as long but slightly narrower, the appendage, which extends from the upper part of its similarly oblique apex, half as long and wide as the joint, attached to it rigidly and without suture; on the right antenna this terminal process, instead of being differentiated, is fused to the apex of the joint throughout its width, forming a single very long joint, with a subdifferentiated apical slope, as mentioned in most of the foregoing species and indicating that this twelfth joint of the male is composed of what may have been two distinct joints in the archetypes of the genus; this consolidated joint of the right antenna is nearly one-half longer than the preceding, being on both antennæ very much more elongate than in any other species; prothorax rather small, nearly as in *californicus* throughout; scutellum very obtuse; elytra about three-fifths longer than wide, two-fifths wider than the prothorax, moderately tapering, with distinctly arcuate sides, to the moderately obtuse apex, the punctures somewhat small but strong, well spaced, the raised lines very feeble; on each there is a feeble longitudinal impression at the middle near outer third; metasternum as strongly pubescent as in *californicus*; tarsi nearly as in that species. Length (♂) 34.0 mm.; width 13.8 mm. Arizona (Cañon of the Colorado),—Prudden. *terminalis* n. sp.

Without knowing the species described above under the name *kempi*, in honor of Prof. James F. Kemp of Columbia University, it would have been difficult to place the *curticornis* of LeConte, but that form gives a very satisfactory clue and, together with *kempi*, it constitutes a well marked and distinctly isolated group of the genus. I do not think that *kempi* can be identical with *curticornis*, however, as they differ very much in size, in geographic habitat and in the apparently greater thoracic width of the former. *Obliquicornis* of LeConte, seems to have the antennæ thicker and more imbricate basally than in *pocularis*, resembling more those of the western forms, from which it probably differs specifically since it occupies a different zoological province; it is correctly recorded as a valid species in the Munich catalogue. One female specimen of *tristis* departs considerably from the type in having the elytra for the most part perfectly smooth, with the punctures everywhere very fine, remote and feeble, becoming obsolescent on the flanks and also having the prothorax relatively wider.

It is impracticable to include *heroicus* Semenov (Rev. Russ. Ent., 7, p. 259)—a name substituted for *heros* Fall (Can. Ent., 1905, p. 274) because of the previous use of the latter by Semenov himself,—as no characters are published which admit of its interpolation in

the table. It is highly improbable that it can be either *tumidus* or *vastus*, described above, as the very striking convexity of the unusually large prothorax would almost certainly have been mentioned by the describer. It is probably allied to the central New Mexican *tristis*, having a shorter and more transverse prothorax, more nearly like that of *laticollis* and of the usual moderate convexity.

Some of the more abnormal characters employed above to distinguish particular species, such as the broadly rounded basal thoracic angles of *validiceps*, the very strong antennal tubercles of *fissiceps*, or the unusually elongated last male antennal joint of *terminalis*, are of such a nature as to render it unfortunate that more material could not be at hand wherewith to test their constancy; but in every such instance other accompanying differences tend to qualify them as species and serve to dispel any inclination to regard them as aberrations or sports.

Group II.

Subgenus *Riponus* nov.

The species of this group are fewer in number and of much smaller size than in *Prionus* proper, as defined above. Those in my cabinet may be known as follows:

- Antennæ in both sexes 15-jointed. 2
 Antennæ (♂) 16- to 17-jointed, the last joint complex, or (♀) 15-jointed. 4
 Antennæ (♂) 18- to 19-jointed, the last two or three fused into a very complex mass, the female not at hand and apparently relatively rare. 5
 2—Basal angles of the prothorax turned upward, acute and very prominent. Body stout, parallel, moderately convex, very shining, black, the elytra piceo-castaneous, the under surface pale brown, the abdomen and legs pale brownish-testaceous; head small, the tempora arcuately converging behind the eyes, which are scarcely at all convex, large, moderately emarginate and separated by fully their own width; antennæ (♀) slender, evidently more than half as long as the body, the joints distally less compressed, the fourteenth and fifteenth joints completely fused into a very irregular elongate mass, nearly twice as long as the preceding; prothorax moderate, very finely and sparsely punctate, coarsely and rather closely at the sides, more than twice as wide as long, the sides of the apex obliquely truncate to the apex of the small but acute apical teeth, the middle teeth slightly more prominent, finely spiculiform; scutellum very obtuse; elytra oblong, narrowing only in apical third to the very



obtuse apex, two-thirds longer than wide, fully a third wider than the prothorax, finely, remotely punctate, rather coarsely and rugosely though scarcely more closely toward the suture posteriorly, the raised lines evident, the outer one obsolete; prosternum finely punctate and pubescent, the metasternum conspicuously so throughout; tarsi moderate, the channel obsolete on the second and third joints of the intermediate. Length (♀) 40.0 mm.; width 16.8 mm. Mexico (Colonia García, Chihuahua),—C. H. T. Townsend.

**townsendi* n. sp.

Basal angles of the prothorax not turned upward, right and more or less blunt, not at all prominent. 3

3—Form much narrower, moderately shining, pale rufo-testaceous in color throughout; head small, the eyes transverse, but slightly convex, the inner part not much developed, about half divided by the rounded emargination, separated by two-thirds their width in both sexes, the tempora not more prominent (♂), diverging toward base (♀); antennæ (♂) stout, only very slightly tapering, barely two-thirds as long as the body, the fifteenth joint simple, as long as the preceding, much compressed, narrowing from the rounded apex to the base, broad and with its surface moderately irregular, or (♀) slender, two-thirds as long as the body, with the fifteenth joint composed of a basal part similar to the preceding joint though smaller and a broad, obtusely truncate and abruptly narrowed prolongation without dividing suture; prothorax small, more than twice as wide as long, nearly as in the preceding, except the basal angles and in the less coarsely punctate lateral part of the surface; elytra very moderately narrowed from base to apex, dehiscent near the latter in the female, three-fifths longer than wide (♂) to three-fourths (♀), with rather coarse and close, impressed, rugose punctures, becoming fine and sparse basally, the raised lines feeble, more distinct in the male; sterna densely pubescent though as usual more conspicuously in the male; tarsi nearly as in the preceding. Length (♂) 31.0, (♀) 36.5 mm.; width (♂) 12.6, (♀) 13.0 mm. Mexico (Ciudad de Durango). **aztecus* n. sp.

Form very stout, oblong-subparallel, moderately convex, piceous-black, the abdomen piceo-rufous, strongly shining; head small, rather narrower behind than across the eyes, the latter moderately convex, separated by fully twice their width; antennæ (♂) stout, dark brown, tapering very gradually and but slightly, extending to apical third of the elytra, the joints strongly biserrate from a dorsal viewpoint, the oblique lower lobe sinuate only toward the inner side of the apex, the outer oblique projection strong, the fifteenth joint twice as long as wide, a little longer than the preceding, compressed, with a strong projection on its inner face near the base; prothorax very short, not quite three times as wide as long, the apex feebly, subevenly sinuate, the base distinctly lobed medially, the teeth distinct, finely acute, the punctures numerous, fine and strong, but little larger laterally; scutellum semicircular; elytra barely one-half longer than wide, the sides parallel, broadly arcuate, converging a little apically; punctures fine, sparse, the surface becoming coarsely impresso-

rugose apically, the marginal groove continuing around the apices to the suture, the raised lines obsolete; prosternum distinctly and closely, the metasternum very conspicuously, pubescent; middle tarsi finely grooved, the groove entire. Length (♂) 30.0 mm.; width 15.0 mm. Mexico (Colonia Garcia, Chihuahua),—Townsend.

**curticollis* n. sp.

- 4—Male piceous-black, with the elytra dark castaneous, narrow in form, convex, rather shining, the head moderate, much narrower behind than across the eyes, the latter notably convex, separated by somewhat less than three-fifths their width; antennæ extending three-fifths from the elytral base, moderately stout, slightly tapering, the joints differing very much from those of the preceding species, not being divaricately biserrate, the sixteenth joint in one specimen, or seventeenth in another, moderate in size and extremely irregular; prothorax very nearly as in *laticollis* in form, great transversality and size, the teeth very moderate but acute, the hind angles right, not prominent, strongly punctate laterally; scutellum ogival; elytra about a sixth wider than the prothorax, two-thirds longer than wide, the sides distinctly converging and broadly arcuate from base to the moderately broad, conjointly rounded apex; punctures rather large, deep, somewhat close-set and conspicuous, finely substellate in contour, becoming fine near the base, the raised lines feeble; sterna conspicuously pubescent, the tarsi slender. Female differing greatly from the male in its stouter, parallel and suboval form, more shining surface, finer and sparser elytral punctures and very short and slender antennæ, which are but little more than two-fifths as long as the body; the elytra are more individually rounded at tip and the sterna much less pubescent. Length (♂) 28.0–31.0, (♀) 36.0 mm.; width (♂) 10.5–12.0, (♀) 14.5 mm. Indiana.....*diversus* n. sp.

A—Nearly similar to the preceding but with much narrower prothorax and very much more rapidly tapering elytra from base to the much more narrowly rounded apex; head, eyes and antennæ nearly similar; prothorax much less transverse, the teeth still smaller, the anterior and middle still less widely separated, the hind angles more prominent, sometimes decidedly acute; elytra longer, three-fourths longer than wide, more than a fourth wider than the prothorax, more shining, the punctures as large but much less close and shallower, the raised lines stronger, the two inner conspicuous, the external nearly obsolete. Length (♂) 30.0–31.5 mm.; width 12.0–12.5 mm. North Carolina (Southern Pines),—A. H. Mancee.

cuneatus n. subsp.

- 5—Eyes approximate, separated by a third of their own width; color dark red-brown throughout, the elytra strongly sculptured. Body oblong, subparallel, moderately convex, somewhat shining though not strongly; head moderate, narrower behind than across the eyes, which are large and notably convex; antennæ (♂) rather stout, somewhat fusoid, long, extending to apical fifth of the elytra, the last joint extremely irregular, composed of at least two amalgamated joints; oblique apical lobes of the joints long and much developed but not serrate at the sides from above as they are in *curticollis* and

to a less degree in *aztecus*; prothorax but little more than twice as wide as long, the two anterior teeth small, the basal angles right, feebly upturned and obtusely subprominent; punctures fine and sparse, but little larger laterally; base broadly, feebly arcuate medially, the sublateral sinuses rather deep; scutellum very obtuse; elytra barely three-fifths longer than wide, about a third wider than the prothorax, parallel, with but feebly arcuate sides which converge but very slightly near the broadly obtuse apex; punctures rather large, deep, impressed and stellate, close-set posteriorly, smaller and sparser basally, the raised lines fine but distinct; sterna densely pubescent; abdomen glabrous and yellowish, the apical margin of all the segments very finely piceous; tarsi slender. Length (σ^7) 34.0 mm.; width 13.3 mm. New York. [*Cerambyx imbricornis* Linn., —Syst. Nat., ed. XII, p. 622].....**imbricornis** Linn.

A—Much smaller and relatively narrower though similar in coloration and sculpture, the antennæ (σ^7) less elongate, extending but slightly behind the middle of the elytra; prothorax similar but much shorter, two and one-half times as wide as long, the hind angles less blunt but not prominent; elytra more than three-fourths longer than wide, about a fourth wider than the prothorax, similarly parallel, the two inner raised lines stronger; tarsi still more slender, the posterior more lineiform, with the second joint subparallel and twice as long as wide. Length (σ^7) 27.5 mm.; width 10.0 mm. A single male without indication of locality.

mimus n. subsp.

B—Form nearly as in *imbricornis*, very parallel though narrower, similar in color but with coarser and much stronger elytral sculpture; antennæ (σ^7) extending to apical fourth of the elytra; head small; prothorax still shorter than in *mimus*, more nearly three times as wide as long, the median tooth relatively longer and very acute, the anterior smaller and only obtusely prominent, the sides behind the middle tooth more converging to the basal angles, which are right and not everted though very sharp; lateral sinuses of the base much shallower than in either of the preceding; elytra nearly three-fourths longer than wide, more than a fourth wider than the prothorax, very parallel, rapidly rounding at apex, the latter very obtusely rounded; punctures notably large, deeply impressed, rather close but irregular, smaller basally, the surface more shining than in the two preceding, the two inner raised lines strong; hind tarsi very slender, the pads beneath as in other forms of this subgenus, much narrower and less dense than in *Prionus* proper, the sulcus relatively wider. Length (σ^7) 25.0 mm.; width 9.6 mm. North Carolina (Southern Pines),—Manee.

brunneus n. subsp.

Eyes much more distant, separated by three-fifths to nearly three-fourths their own width; head black, rufescent anteriorly, the prothorax dark testaceous, the elytra much less strongly sculptured and of a pale tawny-yellow color, sometimes feebly rufescent basally. Body narrow, small in size, the elytra evidently narrowed from base to apex, with feebly arcuate sides and not parallel or nearly so as in the three

preceding; antennæ (♂) similar, extending to about apical third of the elytra, rather less stout; prothorax short, much more than twice as wide as long, nearly as in *brunneus*; elytra four-fifths longer than wide, nearly a third wider than the prothorax, the punctures well separated, usually rather small and feeble, sometimes moderately coarse but never so conspicuous as in the preceding forms; hind tarsi very slender, the second joint of the posterior narrowed slightly from apex to base, rather more than twice as long as wide. Length (♂) 21.0–25.0 mm.; width 8.2–9.4 mm. Indiana, Missouri and Kansas. Seven homogeneous examples, the female unknown. [*P. debilis* Csy.,—Ann. N. Y. Acad. Sci., VI, 1891, p. 21].

debilis Csy.

The anterior margin of the prothorax is broadly but rather deeply sinuate in *townsendi*, the sinus very feebly trisinuate as stated by Bates in defining *mexicanus*, but the hind margin is broadly and feebly arcuate. In *astecus* the anterior margin is more feebly sinuate from side to side, as is also the case in *curticollis*, but the hind margin is very feebly arcuate in the former and rather strongly medially lobed in the latter. All three of these species differ greatly from *flohri* and *mexicanus* in the feebler sculpture and in the 15-jointed, not 14- or 13-jointed antennæ as described of the latter by Bates, and this Mexican group as a whole differs decisively from the *diversus* and *imbricornis* groups in the relatively more abundant females which have also longer antennæ, fewer antennal joints, less slender hind tarsi and several other general differential characters.

Group III.

Subgenus *Antennalia* nov.

This group is given subgeneric rank, not solely because of the large and very complex, closely imbricated male antennæ, which could very well be considered a simple development of the preceding types, but because of the distinctly different structure of the female antennæ, the outer joints being transverse and bilaterally symmetrical. There seems to be but one species, though several forms represented in my collection by the female alone, which may be held to be subspecific for the present though possibly of higher value, are appended. The preceding group is characterized in one way by the relative scarcity of the females, while here this condition is reversed, the male being apparently much rarer than the female, denoting perhaps a difference in life habits of the two groups.

Body oblong, moderately stout and convex, somewhat shining, castaneous in color; head rather small, narrowed behind the large convex eyes, which are separated by a third (σ^7) to four-fifths ($\varnothing$) their width; antennæ (σ^7) extending to apical third of the elytra, stout, the closely imbricated joints very short, rather rapidly narrower only at apex; prothorax small, much more than twice as wide as long, formed nearly as in *debilis*, except that the median tooth is at and not before the middle of the sides, the hind angles more externally prominent and acute and the apex more transverse, with a small sinus near each side, finely, sparsely punctate, very coarsely and unevenly at the sides; scutellum bluntly ogival at tip; elytra (σ^7) three-fifths longer than wide, fully a third wider than the prothorax, the sides distinctly converging from base to the obtusely rounded apex and feebly arcuate, the punctures large and well separated but shallow and unevenly impressed, the raised lines feeble and very obtuse; sterna all densely pubescent; tarsi long and very slender, the pads beneath denser than in *imbricornis* and with a narrower sulcus; in the female the elytra are parallel, with more strongly and subevenly arcuate sides, and the antennæ are slender, extending not quite to basal two-fifths of the elytra and they are 23- or 24-jointed, the outer joints small and bilaterally acute. Length (σ^7) 31.0, ($\varnothing$) 26.0 mm.; width (σ^7) 12.0, ($\varnothing$) 11.0 mm. Texas and Colorado. The Colorado female possibly does not belong to the Texas male, being much smaller and of different shape, but the prothorax is identical in form, differing much in this way from either of the varieties given below. [*P. fissicornis* Hald.,—Proc. Acad. Phila., III, p. 125].....**fissicornis** Hald.

A—Form more slender than in the preceding and much darker in color, black or faintly piceous-black, the abdomen feebly rufescent, the legs and antennæ blackish-brown; surface very shining; head notably small, very much narrower behind than across the eyes, which are very convex and separated by three-fourths their width, the antennæ ($\varnothing$) slender, with the basal joint rather stout as usual, not extending behind basal third of the elytra, 22-jointed; prothorax nearly twice as wide as the head, much more than twice as wide as long, not subparallel as in the preceding but gradually angulate to the middle of the sides from just before the prominent acute basal angles and just behind the small and obtuse apical teeth; elytra parallel, with evenly and distinctly arcuate sides, much shorter than the abdomen, less than three-fifths longer than wide, at the middle two-fifths wider than the prothorax, the punctures rather large but feebly impressed, everywhere widely separated, the two inner raised lines distinct; sterna subglabrous as in the preceding female; tarsi more slender, almost filiform, the pads beneath very slender and rather thin. Length ($\varnothing$) 27.0 mm.; width 10.4 mm. Texas.....**parviceps** n. subsp.

B—Form stouter, much larger, similarly parallel, more oblong, the head and prothorax very much more developed, similar to *parviceps* in coloration, in the shining lustre and sparse though large elytral punctures, the surface becoming more rugose apically; head moderate, nearly three-fifths as wide as the prothorax, the

eyes separated by very nearly their own width, the antennæ (♀) slender, extending barely beyond basal fourth of the elytra, 20-jointed; prothorax very large, much more than twice as wide as long, convex, finely, sparsely punctate, coarsely and irregularly toward the sides, the latter parallel, but very slightly angulated well before the middle, the angle even obtusely subprominent and not spiniform, the anterior right, not rounded, moderately projecting, the basal angles right, rather blunt, not prominent; elytra parallel, narrowing slightly behind the middle, but little more than one-half longer than wide, only about a fifth wider than the prothorax, the raised lines very feeble; abdomen concolorous, black or nearly so; tarsi slender though less so than in *parviceps*. Length (♀) 32.0 mm.; width 13.0 mm. Texas.

transversus n. subsp.

In this group the eyes seem to be much more widely separated in the female than in the male, a feature not particularly evident in the other groups. The difference in form of the head and prothorax of *parviceps* and *transversus* is extreme, and I have but little doubt that they are specifically different. The female above attached to the male representative of *fissicornis* is probably different at least subspecifically. In the type of *transversus* the twelfth and thirteenth joints of both antennæ are completely amalgamated on the upper surface, without trace of suture,—a singular malformation. In the male of *fissicornis* the longitudinal impression of the elytra at outer third is very pronounced but it is shallow or obsolete in the three females described.

The Japanese *insularis* Mots., resembles somewhat our species of the *pocularis* type, but the antennæ of the male are longer, extending almost to the end of the elytra; they are only very moderately stout, feebly tapering and not imbricate though serrate; my two males represent two subspecies, one with very short prothorax and eyes separated by but little more than a fourth their width, and the other with larger head, less transverse prothorax and eyes separated by three-fifths their width; there are also other very evident differences.

Prionina n. gen.

The few species constituting this genus differ from *Prionus* in two essential characters affecting the antennæ and tarsi. The outer joints of the antennæ, presumably in both sexes but certainly in the male, are less compressed and have their dull and chagrined surfaces even and wholly devoid of the longitudinal anastomosing

raised lines, so constantly present in *Prionus*. The hind tarsi are very much shorter than in that genus, and the basal joint beneath is not channeled but broadly concave and loosely pubescent throughout its extent. The lateral teeth and glabrous surface of the prothorax are as in *Prionus*, and the anterior tooth is no more prone to become extinct than in such forms as *Prionus kempi*, *curticornis* and *brunneus*, for example. Our two known species may be distinguished as follows:

Color black, the legs and antennæ also deep black; surface convex, only moderately shining; head moderate though larger than in the following species, narrowed at base, the eyes moderate, rather convex, separated by three-fifths their width; antennæ (♂) extending slightly beyond the middle of the elytra, only moderately thick, the last joint much compressed, as long as the preceding and a little narrower, evenly oval, narrowed at base, twice as long as wide; last maxillary palpal joint two-fifths longer than the preceding; prothorax scarcely more than twice as wide as long, notably convex, more shining than the elytra, finely, rather sparsely but deeply punctate, more closely but only a little more coarsely toward the sides, the anterior and middle teeth acute and rather well developed, the latter slightly the more prominent, the basal angles right, rather blunt, not prominent; scutellum moderate, rather obtuse; elytra one-half longer than wide, fully a third wider than the prothorax, the sides notably converging and barely at all arcuate from base to the obtusely rounded apex, not dehiscent, finely, feebly and sparsely punctate and feebly, irregularly rugulose, the raised lines feeble; sterna conspicuously pubescent; abdomen picescent, slightly pubescent basally; tarsi short, notably broad. Length (♂) 26.5 mm.; width 10.8 mm. New Mexico (Albuquerque). [*Prionus palparis* Say, —Journ. Ac. Phila., III, p. 327].....**palparis** Say

Color evenly red-brown, moderately convex, rather shining throughout; legs concolorous, the antennæ paler and more ochraceous; head moderately small, the tempora parallel and feebly, evenly arcuate, fully as wide across the middle of the latter as across the eyes, which are notably small, transverse, feebly convex and separated by one-half more than their own width; palpi slender, pale, the last joint fully one-half longer than the preceding; antennæ (♂) but moderately thick, feebly diminishing and only very moderately compressed distally, extending three-fifths from the elytral base, the last joint very evenly oval, obliquely narrowed basally, its faces even and convex, twice as long as wide, about as long as the preceding; angles and edges of all the joints obtuse and rounded; prothorax evidently more than twice as wide as long, moderately convex, glabrous, punctured sparsely but rather strongly as in *palparis*, the surface tumescent on the median line at apex, and with the oblique arcuate sublateral impression and tumidity behind the middle distinct; median teeth well developed, acute and spiniform,

much more prominent than the anterior, which are small and obtusely blunt though evident, the basal angles right, distinct; scutellum evenly and broadly ogival; elytra three-fifths longer than wide, somewhat dehiscent apically, barely a third wider than the prothorax, the sides rapidly converging and feebly arcuate from base to the somewhat narrowly obtuse apex; punctures rather fine and sparse but distinct, the surface smoother and more shining than in *palparis*, the raised lines very feeble; sterna much less pubescent, the tarsi short, moderately stout. Length (♂) 22.5 mm.; width 9.0 mm. Kansas.....**simplex** n. sp.

Both of these species are rather rare and known as yet only by the male. LeConte left *palparis*,—which has come to be erroneously recorded as “*palpalis*” in our lists—with *Prionus*, though noting the radically different sculpture of the antennæ; he however failed to note the different form of the tarsi, which, with the structure of the maxillary palpi, renders a separate genus necessary.

Homæsthesis Lec.

This genus was proposed by LeConte to receive his *Prionus integer*, as well as the *Prionus emarginatus* of Say; it is the only one of our Prionini in which the pubescent pronotum appears, so far as known, but probably there are also glabrous forms, judging from the negative evidence of failure to mention any dorsal vestiture in the descriptions of *integer* and *Prionus innocuus*. The species may be distinguished among themselves as follows:

- Prothorax with a tooth at the sides, the angles all obtuse, the tooth generally well before the middle.....2
- Prothorax without trace of median tooth, the sides smoothly rounded at or before the middle.....3
- 2—Pronotum without distinct pubescence; color piceous; prothorax finely punctulate, narrowed anteriorly, the sides unidentate at the middle, the posterior angles subobtuse; elytra sparsely, rugosely punctate; antennæ (♂) 13-jointed, stout, strongly imbricate, the last joint complex, as though formed by two connate joints, the inferior lobes of the joints slightly sinuate. Length 24.0 mm. Colorado (near Pike's Peak). [*Prionus integer* Lec.—Journ. Acad. Phila., ser. 2, II, p. 107].....**integra** Lec.
- Pronotum pubescent; color castaneous, shining; head, pronotum and sterna clothed with long flavo-ferruginous hair, densely punctate; antennæ 14-jointed, glabrous, perfoliate, imbricate, the inferior lobes emarginate; mandibles black at tip; prothorax but slightly margined at the sides, where there is a single tooth at or before the middle, the angles obtusely rounded; elytra somewhat uneven, punctured; female glabrous, with simple antennæ. Length (♂, ♀)

- 17.5–20.0 mm. Upper Arkansas River,—Say; near Long's Peak,—LeConte. [*Prionus emarginatus* Say,—Journ. Acad. Phila., III, p. 327].....*emarginata* Say
- 3—Prothorax very short, nearly three times as wide as long; body very stout, rufo-piceous, shining, the eyes in size nearly as in *integra*; prothorax moderately punctate, with all the angles well rounded, the sides rounded, slightly undulated; elytra almost one-half wider than the prothorax,—“*brevioribus*” of the description evidently a misprint for *latioribus*,—about one-half longer than wide, rather strongly punctured, the apices individually rounded; antennæ 13-jointed. Length (♀) 22.5 mm. New Mexico,—Ulke. [*Prionus innocuus* Lec.,—Proc. Acad. Phila., 1862, p. 43]...*innocua* Lec.
- Prothorax scarcely more than twice as wide as long; body not relatively stout. 4
- 4—Body pale yellowish-brown in color throughout, the legs and antennæ concolorous; surface strongly shining; head very small, much narrowed behind the eyes, the tempora converging and arcuate to the base; eyes moderate, notably convex, separated by about a fourth or fifth more than their width; antennæ (♂) moderately stout, strongly imbricate, the lower lobes of the joints deeply emarginate, extending to about the middle of the elytra, 13-jointed, the last joint elongate-oval, much longer than the preceding, with a pointed tubercle on the inner face, as though the joint had originated by an amalgamation of two joints; maxillary palpi slender, very pale, the last joint nearly one-half longer than the preceding; prothorax small, rounded medially at base, truncate at apex, very broadly and evenly rounded at the sides, without trace of inequality, widest but little before the middle, narrowed anteriorly, with the angles very obtuse and rounded, the basal angles broadly rounded; surface moderately convex, rather finely, densely punctate and with long pale hairs throughout, the latter also present at the base of the head and on the posterior part of the interocular surface; scutellum large, very obtuse; elytra three-fifths longer than wide, one-half wider than the prothorax, gradually dehiscent from basal third, the sides parallel, arcuately converging in apical two-fifths, the apices rather narrowly and obliquely rounded, the sutural angles only feebly prominent; punctures coarse, impressed, somewhat close and irregular, the surface rugulose but shining, the raised lines barely observable; sterna densely punctate and pubescent; legs moderate, the tarsi very long, slender, the posterior more than three-fourths as long as the tibiæ, with sparse bristling hairs and two very fine tomentose lines beneath. Length (♂) 21.0 mm.; width 8.8 mm. Colorado.
- pubicollis* n. sp.
- Body narrower and more elongate, very dark castaneous, the legs concolorous, the antennæ a little paler, shining; head very small, scantily pubescent, in form as in the preceding but with the eyes separated by not quite their own width; antennæ (♂) and palpi similar, the last joint of the former less elongate and with the protuberance well beyond the middle; prothorax similar but more coarsely and sparsely punctate, the pubescence not so long and far less close, differing

also in being subsinuately parallel from base to apical third, where the somewhat protuberant sides are very evenly rounded, without trace of denticle; scutellum similar; elytra longer, two-thirds longer than wide, one-half wider than the prothorax, not dehiscent, the sides distinctly converging and feebly arcuate from the humeri to the apex, which is conjointly rather narrowly and subcircularly rounded, the punctures coarse and rather shallow as in the preceding though much less close-set; tarsi very slender, much shorter, the posterior scarcely two-thirds as long as the tibiæ. Length (♂) 21.5 mm.; width 8.8 mm. Colorado,—J. F. Kemp. . . . **debiliceps** n. sp.

It is assumed, as intimated above, that the pronotum of the male type of *integra* is glabrous, by which character it differs from the male of any other known species. According to Say, the dense pubescence of the male pronotum of *emarginata* is wanting in the female, but even this statement apparently lacks any more recent verification. Admitting this sexual disparity in the thoracic pubescence however, I do not think that *innocua* Lec., can be the female of *emarginata*, as conjectured by LeConte, because there is no indication of sexual differences in the lateral teeth of the prothorax anywhere among our other Prionini. It is for this reason that I assume without hesitation that *pubicollis* is distinct from *emarginata*, though having the same long dense pronotal vestiture, because the broadly rounded sides of the prothorax afford not the slightest suggestion of the lateral submedian tooth of *emarginata*, which is so pronounced as to have been especially mentioned by both Say and LeConte and plainly evident in the drawing of that species given by LeConte in his paper on the Coleoptera of Kansas. There is evidence that the species of *Homæsthesis* are rather numerous though very rare in individuals, and, as *dibiliceps* is widely different from *pubicollis*, this is all the more reason for believing that the type of *pubicollis* is not in any way an aberrant example of *emarginata*.

I have been unable to find any decided differences in the separation of the hind coxæ, such as mentioned by LeConte (Class. Col. N. A., p. 274) in the case of certain females, anywhere among our Prionini. The coxæ may vary slightly in distance asunder but the intercoxal process always has the same acutely angulate form. Perhaps the remark applies wholly to the genus *Homæsthesis*, of which I have not seen the female, this also being true of *Prionina*, which is closer to *Homæsthesis* than to *Prionus*.

Tribe PÆCILOSOMINI.

Pyrodes Serv.

The following species is allied to *marginatus* White:

***Pyrodes cervicalis** n. sp.—Male moderately narrow and feebly convex, densely sculptured and but feebly shining, obscure viridi-cupreous, the elytra obscure green, frequently suffused with obscure cupreous, the side margin narrowly and inconstantly brighter cupreous, the suture and base never cupreous, concolorous; head much longer than wide, broadly and very deeply furrowed, obsolescently and narrowly toward base; tempora parallel, nearly straight, twice as long as the eyes and a little less prominent; antennæ a fourth longer than the body, slender, the third joint almost as long as the next two combined, obsoletely and not densely sculptured; prothorax, excluding the spine, slightly less than twice as wide as long, the truncate base and apex equal; sides sinuously diverging from the apex to the apex of the very acute lateral spine, slightly behind the middle, thence still more sinuous and converging to the base; surface coarsely, confusedly punctate, broadly and feebly impressed medially; scutellum moderate, as long as wide, pointed, finely and variably sculptured, subglabrous, with a fine median stria; elytra three-fifths to three-fourths longer than wide, gradually narrowed from base to the obtusely rounded apex, one-half wider than the prothorax, excluding the spines, the surface even, densely, subvermicularly puncto-rugose; humeri widely exposed at base and rather prominent; under surface cupreous, the abdomen brighter and more polished. Female wanting. Length 23.5–27.0 mm.; width 8.2–9.6 mm. Honduras. Four specimens.

Differs from *marginatus* in the absence of cupreous elytral margins, except very finely and inconstantly externally, and in the cupreous under surface, among other characters. The fifth ventral is shallowly but sharply sinuate medially at apex.

Subfamily CERAMBYCINÆ.

Tribe ASEMINI.

In this tribe and in some genera of the Callidiini as well, though not so evidently in most of the latter, the second antennal joint is remarkably developed in a relative sense, sometimes being not so very notably shorter than the third; this is a highly distinctive character in this part of the Cerambycinæ, though reappearing in some Clytids and several Lepturids, isolating the Asemini among the other tribes in this vicinity. The genera are few in number and not very strongly accentuated.

Asemum Esch.

Distinguished among the Asemini very clearly by the small, deeply emarginate and very finely faceted eyes and unusually short antennæ; the male has the fifth ventral very broadly arcuato-truncate at tip, exposing the sixth, while in the female it is strongly rounded, concealing the latter segment. Our species have never been carefully investigated but are rather numerous, those in my cabinet being definable as follows:

Pronotum with the median line not finely striiform, except sometimes centrally. 2

Pronotum with a fine substriiform median line, feebly impressed and extending from the apical margin nearly to the base. 9

2—Sculpture of the pronotum very fine, dense and confused, the granules seldom very distinct. Eastern species. 3

Sculpture much less dense, the granules larger, always isolated, with the interspaces shining. Western species. Comparative descriptions drawn from the female throughout. 6

3—Elytra in both sexes distinctly more than twice as long as wide, covering the entire abdomen in the female or very nearly. 4

Elytra materially shorter, not or scarcely more than twice as long as wide, leaving the entire last dorsal segment exposed in the female. 5

4—Form parallel, moderately convex, dull, dark brown to nearly black; pubescence very short, rather abundant, palish; head three-fifths as wide as the prothorax, densely sculptured; antennæ short and stout, the pubescence abundant, rather long, pale and conspicuous, fifth joint rather more swollen, sixth shorter than the seventh and very much shorter than the fifth; prothorax one-half wider than long, evenly arcuate at the sides or very faintly subangulate, more or less impressed centrally and not at all or very faintly at each side of the middle; scutellum well developed, dull, very densely punctate and evidently pubescent; elytra parallel, abruptly obtuse at apex, wider than any part of the prothorax, faintly and obtusely substriate, the intervals feebly convex, the alternate ones a little more strongly; punctures fine, very dense throughout, the surface very dull; under surface shining, finely, not densely punctate and with short pale hairs; hind tarsi short, rather slender, the first joint as long as the next two, second one-half longer than wide, the third cleft almost to the base. Length (♂, ♀) 13.0 mm.; width 3.8-4.0 mm. Pennsylvania. [*A. mæstum* Hald.,—Tr. Am. Phil. Soc., X, p. 35; *obsoletum* Hald.,—(l. c.); *brunneum* Hald.,—(l. c.); *substriatum* Hald.,—l. c., p. 36—Massachusetts].*mæstum* Hald.

A—Characters similar to the above, except that the prothorax is dilated, being a little wider than the base of the elytra. [*A. juvencum* Hald.,—l. c., p. 36].*juvencum* Hald.

Form nearly as in *mæstum* but more slender and with the sides of the elytra converging perceptibly from about apical third, the apices less obtuse; color piceous-black, dull, the prothorax slightly rufescent;

head very densely punctate; antennæ (♂) fully one-half as long as the body, slender, black, moderately pubescent, the second joint one-half longer than wide and nearly three-fourths as long as the third, fifth scarcely swollen, sixth very much shorter and also distinctly shorter than the seventh, tenth one-half longer than wide; prothorax nearly as in *mæstum* but not impressed; scutellum as in the preceding; elytra finely, extremely densely punctate and opaque, the usual costulation feeble; under surface shining, finely but rather closely punctulate and distinctly puberulent; hind tarsi nearly as in *mæstum* but more slender. Length (♂) 12.0 mm.; width 3.6 mm. Wisconsin (Bayfield),—Wickham.....

- 5—Form stouter than in *mæstum*, deep black throughout, rather dull; head small, densely punctate; antennæ (♀) moderately stout, extending a little beyond the base of the elytra, the pubescence moderate but very stiff, dark fulvous, last six joints abruptly shorter as usual and gradually diminishing to the tenth; prothorax well developed, almost as wide as the elytra, more than one-half wider than long, evenly rounded at the sides and more narrowed basally than apically, the apex broadly, evenly sinuate; surface even, becoming broadly concave medially but not toward apex, the granules very small and everywhere dense; scutellum subquadrate, shining, rather sparsely punctate; elytra parallel, arcuately narrowing in about apical fourth, the apices not very obtuse; surface minutely and closely punctate, much more finely and rather less closely than in *mæstum*; under surface shining and punctulate; hind tarsi slender, nearly as in the preceding but black. Length (♀) 14.0 mm.; width 4.3 mm. Lake Superior (locality unrecorded).....

ebenum n. sp.
Form a little narrower than the preceding, much smaller in size and more shining, deep black throughout; antennæ (♀) similar but a little longer, extending to basal fourth of the elytra; prothorax smaller, much narrower than the elytra and less transverse, not quite one-half wider than long, less broadly rounded and almost angulate at the sides behind the middle, truncate and not sinuate at apex, more coarsely and confusedly sculptured, evenly convex, the median line just visibly and narrowly impressed centrally; scutellum smaller, much less obtuse, broadly pointed at tip, similarly shining and loosely punctate; elytra arcuately narrowing more abruptly in apical fourth or fifth, rather shining, the punctures very fine and distinctly separated, unusually rough, the two median costules strong, the intervals confusedly and coarsely undulato-rugose; under surface shining, similarly punctulate but with the hairs still shorter, finer and less distinct. Differs distinctly from *ebenum* in the form of the exposed last dorsal segment, which is here nearly twice as wide as long, evenly rounded, with the surface ovally impressed at each side; in *ebenum* this segment is about as long as wide, very much more narrowly rounded, with the lateral impressions very much longer. Length (♀) 11.0 mm.; width 3.3 mm. Wisconsin (Bayfield),—Wickham.

curtipenne n. sp.

Form, color and sculpture nearly as in *mæstum* but very much shorter, piceous-brown, dull; vestiture even, rather close, short and coarse;

head deeply and closely punctured; antennæ (♂) moderately thick, filiform, extending about to the middle of the body, coarsely, densely sculptured, brown, black at base, the second joint two-thirds as long as the third, which is slightly longer than the fourth, fifth one-half longer than the fourth but not thicker, tenth two-fifths longer than wide, the last rather abruptly narrowed and rapidly pointed in nearly apical half; prothorax two-fifths wider than long, slightly swollen at the sides behind the middle, thence rapidly narrowing to the base which is much narrower than the apex, unimpressed, rather strongly, densely, vermicularly rugose, more finely medially; elytra about a fourth wider than the prothorax, scarcely twice as long as wide, parallel and straight at the sides, abruptly rounding and very obtuse at apex, not very finely, extremely densely punctate, the raised lines as in *mæstum*; fifth ventral shorter than the fourth, rounded. Length (♂) 9.5 mm.; width 3.0 mm. Massachusetts (Wellesley),—Frost.

amputatum n. sp.

6—Color black or piceous-black throughout.....7

Color black, the elytra more or less pale brown.....8

7—Body rather stout and of somewhat larger size than any of the preceding, black, feebly shining; head similar but not quite so densely punctate; antennæ (♀) black, gradually dark brown distally, moderately slender and pubescent, extending to about basal fifth of the elytra, the fifth joint much longer than the fourth or sixth, which is rather longer than the seventh, tenth fully three-fourths longer than wide; prothorax well developed though distinctly narrower than the elytra, barely one-half wider than long, the sides subangularly swollen well behind the middle; surface convex, with a rounded central impression and two or four which are more lateral and sometimes obsolete; scutellum finely, densely punctate; elytra ample, entirely covering the abdomen, parallel, arcuately narrowing in nearly apical third, finely, very closely but not densely punctate, the intervals generally subequally and feebly costuliform, shining under surface minutely, not closely punctate, with the hairs rather longer, coarser and more distinct than usual. Length (♂, ♀) 13.0–15.0 mm.; width 4.2–5.0 mm. Washington State to Nevada and Utah. [*A. atrum* Esch.,—Bull. Mosc., II, p. 66]. . **atrum** Esch.

Body much smaller and more slender, rather strongly shining and very deep black throughout; head more densely punctured medially; antennæ (♀) unusually small, slender, but little longer than the head and prothorax, black throughout, of the usual structure but with the outer six joints less considerably shorter than the fifth than in the preceding; prothorax rather less than one-half wider than long, widest and strongly rounded at the sides at or very near the middle, and not posterior thereto as in the preceding, feebly impressed medially and with a very faint impression at each side of the medial sufficiently evident, the granules unusually large and conspicuous, the general surface polished; scutellum rounded, shining, finely and loosely punctate; elytra more than twice as long as wide but exposing the very narrow and subtruncate last dorsal, not wider than the prothorax, very minutely and closely but not densely

punctate, the punctures isolated over a rather shining surface, the two ridges strong, the intermediate broadly prominent and rugose; abdomen as in *atrum*; hind tarsi short and very slender, the second joint twice as long as wide. Length (♀) 10.0 mm.; width 2.8 mm. Colorado (Boulder Co.).....**parvicorne** n. sp.

- 8—Form rather stout, unusually large in size; head strongly and closely punctate, rather impressed centrally; antennæ (♀) extending to basal fifth of the elytra, not very stout, pale brown, moderately pubescent, the hairs pale yellowish, the tenth joint more than twice as long as wide, the process of the eleventh unusually short, not half as long as the basal part; prothorax one-half wider than long, distinctly narrower than the elytra, the sides bluntly angulate only just behind the middle; surface very convex, with an unusually large and deep central concavity occupying about median fourth of the width, the granules coarse, strong and isolated on the shining surface; scutellum black, broadly rounded at tip, closely punctate; elytra slightly more than twice as long as wide, parallel, arcuately narrowing in about apical fourth, the apices very obtuse, exposing the last dorsal, which is as long as wide, obtrapezoidal with rounded tip, its surface very minutely, closely and clearly punctate on the pale background; two medial ridges and the sublateral all strong, the intermediate very feeble; abdomen deep black, punctulate as usual; legs black, pale distally, the hind tarsi nearly as usual. Length (♀) 15.5 mm.; width 4.8 mm. Wyoming (Laramie)....**fulvipenne** n. sp.

Form less stout and less convex, the elytra less pallid; head strongly, closely punctate, impressed along the median line; antennæ (♀) short but rather slender, of the usual form; prothorax short, rather more than one-half wider than long, parallel, the sides almost evenly and subcircularly rounded; surface shining between the isolated and very distinct granules, only moderately convex, feebly tri-impressed medially along a transverse submedian line; scutellum black, nearly as in the preceding; elytra parallel, barely visibly wider than the prothorax, finely, very densely punctate and rather dull, the ridges distinct; exposed last dorsal segment but little wider than long, its entire contour very evenly parabolic; abdomen castaneous, minutely, sparsely punctate but rather distinctly pubescent; tarsi as usual, darker than in the preceding species, from which the present differs in its much narrower form, shape of the last dorsal segment, less impressed and shorter, less convex prothorax and many other structural features. Length (♀) 13.0 mm.; width 3.8 mm. British Columbia (Aldermere),—communicated by Rev. J. H. Keen.

costulatum n. sp.

- 9—Form much narrower and more convex, black, the scutellum and elytra dark red-brown; head densely and deeply punctate, scarcely impressed; antennæ (♂) fully one-half as long as the body, black, slender, of the usual general structure and vestiture, the joints beyond the fifth abruptly shorter and still more slender, sixth and seventh equal, tenth more than twice as long as wide; prothorax convex, barely one-half wider than long, but slightly narrower than the elytra, angulate or more narrowly rounded at the sides just behind

the middle, very densely, somewhat confusedly granose, the surface very feebly tumescent at each side of the impressed median line in about median third of the length; scutellum longer than wide, broadly rounded at tip, densely punctate and dull throughout; elytra much more than twice as long as wide, finely, very densely punctate and dull throughout, the surface also coarsely and feebly rugose, the two median ridges strong, especially the inner, the intermediates feeble, the sublateral barely traceable and very fine; apex abruptly obtuse, covering the last dorsal segment; hind tarsi very slender, the basal joint a little longer than the next two, the second more than twice as long as wide. Length (♂, ♀) 10.8–11.0 mm.; width 3.2–3.9 mm. Washington State.....**pugetanum** n. sp.

Form oblong and parallel, only slightly convex, black, the elytra very dark brown; head densely, not very coarsely punctate, concave medially; antennæ (♂) very short, stouter than in any other species, extending to basal sixth of the elytra, pale brown in color, rather conspicuously and pallidly pubescent, the second joint but little longer than wide, fifth one-half longer than the sixth, which is distinctly shorter than the seventh, tenth less than one-half longer than wide; prothorax one-half wider than long, distinctly narrower than the elytra, parallel, the sides broadly, subevenly rounded; surface feebly convex, shining, strongly and closely granose, not only impressed finely along the median line but with an oval impression at each side at lateral and basal fourth; scutellum wider than long, semicircular, finely punctate, differing from any other species in having an entire impunctate median line; elytra a little more than twice as long as wide, parallel, very obtusely rounded at tip, finely, very densely punctate and dull, the two median ridges distinct, the intervals rugose; last dorsal covered, broad and very broadly rounded at apex; abdomen shining, feebly punctulate, black, brownish apically; hind tarsi missing in the type. Length (♂) 12.8 mm.; width 4.3 mm. Canada (Ontario).....**brevicorne** n. sp.

The species described by Haldeman (l. c., p. 36) under the name *fuscum*, I do not know; it is recorded as a synonym of *mæstum* in the Munich catalogue and seems to have dropped out of sight but may nevertheless be a distinct species, as it is only 8 mm. in length, testaceous, with the metasternum and hind coxæ piceous, the prothorax even and the elytra parallel, with obsolete elevated lines; it is described as inhabiting Pennsylvania and its size and peculiar coloration should permit of easy identification. *Substriatum* of Haldeman (l. c., p. 36), from Massachusetts, is recorded as a synonym of *mæstum* in the Munich catalogue and as a variety in the Henshaw list; it would seem from the published characters to be a much less distinct form than *fuscum*. The locality of *juvencum* Hald., is not stated. *Brevicorne* is an aberrant species

in antennal and scutellar characters, as well as in other directions, but is an *Asemum* without doubt, although the anterior coxæ are separated slightly.

The structure of the last dorsal segment of the abdomen, which is frequently exposed to view, is important in the differentiation of the species of *Asemum*, as there is surprising diversity in its conformation, thus affording very convenient characters.

Liasemum n. gen.

The species named *Asemum nitidum* by LeConte, has large and coarsely faceted eyes as in *Criocephalus* and it is therefore not an *Asemum*; it differs also in its basally very stout antennæ, which are formed as in *Asemum asperum* Lec., though more coarsely and not so closely pubescent. Its facies will not admit it to either of the genera mentioned and I therefore separate it generically under the above name, together with a second species recently discovered. It may be distinguished from *Criocephalus* by its very much shorter tarsi, which somewhat resemble those of *Asemum*. The anterior coxæ are separated as in *Criocephalus*, while in *Asemum* they are contiguous or with the process posteriorly very acute; in the aberrant *Asemum brevicorne* however, they become evidently though very narrowly separated.

Liasemum mokelumne n. sp.—Much smaller and narrower than *nitidum* but similarly shining, not deep black as in that species but blackish-piceous, still more rufescent beneath; head three-fourths as wide as the prothorax, finely, rather closely punctate, the median line not or only very feebly and finely impressed; antennæ (♀) short, extending to basal fifth or sixth of the elytra, formed as in *nitidum* but shorter and not quite so stout; prothorax as in *nitidum* but less transverse, scarcely a third wider than long, shining, finely and deeply punctate, loosely so medially, closely toward the sides, the median line faintly impressed for a short extent at the centre and more broadly near the base; scutellum subquadrate, broadly rounded behind, closely punctate but shining; elytra parallel, evidently wider than the prothorax, more than twice as long as wide, evenly and subcircularly rounded conjointly at apex, very finely, closely punctate, the two median raised lines feeble but evident, the inner very distinct, especially toward base, the intermediate ridges obsolete, except those between the raised lines and near the suture which are barely traceable; anterior coxæ evidently though not widely separated; hind tarsi short but slender. Length (♀) 12.5–14.5 mm.; width 3.5–4.0 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

Differs from *nitidum* not only in its paler color and other char-

acters stated above, but in the still smaller and more slender tarsi, shorter legs and other features readily observable. Of *nitidum* Lec., I have three very good specimens from Monterey, California; it extends thence far to the northward into Oregon.

Nothorhina Redt.

The species here described under this name are allied closely to *Criocephalus* and have similar large and coarsely faceted, emarginate eyes, but differ in the generally stouter antennæ, sometimes rapidly tapering distally and clothed basally with long and close-set erect pallid hairs, also in the shorter tarsi, thus lying between *Liasenum* and *Criocephalus* though very much closer to the latter. The general habitus of the body is similar to that of *Criocephalus* in every way. The species are more numerous than supposed and those in my cabinet are divisible into two strongly marked groups as follows:*

Prothorax but slightly wider than long, with a large subquadrate median concavity; antennæ short, about one-half as long as the body, nearly similar in the sexes and notably stout basally.....2

Prothorax transverse, without trace of a central subquadrate concavity; antennæ very much longer, sometimes scarcely shorter than the body.....3

2—Piceous-black, finely pubescent; head roughly punctate, the eyes large, deeply emarginate; prothorax shorter than wide, rounded, punctate, broadly excavated medially, the excavation not extending much before the middle, toward the sides with elevated asperate punctures; antennæ scarcely half as long as the body, rufescent basally. Length 17.5–22.5 mm. Oregon (Prairie Paso). [*Asemum asperum* Lec.,—Proc. Acad. Phila., 1854, p. 18].....**aspera** Lec.

A—Similar to the preceding but having the pronotal concavity subquadrate in form, extending from near the base to apical third or even somewhat beyond and with a low obtuse tuberculiform swelling at its posterior limit at basal fourth of the pronotum; antennæ black basally, feebly picescent distally, evidently some-

* Further study indicates that the species here assigned to *Nothorhina* do not belong to that European genus, the type of which is a small insect with filiform antennæ and finely faceted eyes, but should merely constitute a section of the genus *Criocephalus*. Just why LeConte separated *Asemum asperum* from *Criocephalus* and placed it in *Nothorhina* I cannot surmise, except perhaps because of the peculiar pronotal concavity of that and allied species; but *spissicornis* has even more basally thickened and pubescent antennæ, associating it closely with *asperum* in that respect, while the prothorax is wholly different and of the usual form in *Criocephalus*. I am decidedly of the opinion that *Nothorhina* does not occur in America but leave the assignments as originally made for the time being.

what more than half as long as the body. Length (σ^7 , ♀) 18.5–19.5 mm.; width 4.6–5.5 mm. Colorado (Boulder Co.).

impressa n. subsp.

B—Similar to *impressa* but not quite so elongate, the pronotal impression similar but having the feeble tubercle, not at basal fourth of the pronotum, but just behind the middle of the length; antennæ shorter, barely half as long as the body; scutellum similarly impressed along the middle; elytra parallel, with very straight sides, the raised lines scarcely so evident; surface more shining, the punctures similarly very fine and close-set throughout. Length (σ^7) 16.8 mm.; width 4.5 mm. New Mexico (Cloudcroft),—Knaus.....*rectipennis* n. subsp.

3—Body larger and less slender, black, dull, the elytra blackish-brown; head large, fully four-fifths as wide as the prothorax, deeply canalliculate along the median line, extremely densely, not coarsely punctate, the large eyes feebly emarginate, separated by twice their width; antennæ (σ^7) nearly four-fifths as long as the body, the first five joints very stout and gradually stouter basally, joints six to eleven abruptly thinner and also gradually feebly tapering distad, the last but little longer than the tenth and not appendiculate; prothorax nearly one-half wider than long, parallel and evenly rounded at the sides, extremely densely, not very finely punctate throughout, with the broadly impressed median line laterally dilated anteriorly, the surface also feebly, transversely impressed before the base nearly throughout and with two large deep rounded discal impressions; scutellum finely, very densely punctate; elytra long, subparallel, but slightly wider at the humeri, rounded, not dehiscent and unarmed at apex, minutely, very densely punctate and with larger, rather close-set punctures intermingled, becoming obsolescent apically, the two discal raised lines distinct, the surface not otherwise uneven; hind tarsi (σ^7) two-thirds as long as the tibiæ, only moderately slender, the basal joint more than two-fifths of the entire length, second two and one-half times as long as wide, third a little longer than wide, cleft almost to the base, the under surface densely padded and with the usual fine glabrous canalliculation entire and equal. Length (σ^7) 19.5–20.0 mm.; width 5.0 mm. Colorado (Boulder Co.).....*spissicornis* n. sp.

A—Similar to *spissicornis* in its dull surface, fine dense sculpture and in all other features, except that it is narrower in form, with the elytra more tapering and dehiscent near the apex, the head a little smaller, the antennæ slightly longer, notably less thickened basally, though of similar proportion among the joints, the prothorax even shorter, not rounded but broadly medially angulate at the sides, the median line much more broadly impressed, the adjoining surface more longitudinally tumid and the discal concavities obsolete; fifth male ventral similar though a little less transverse, the truncature not quite so wide, less pubescent and more distinctly sinuate. Length (σ^7) 17.5 mm.; width 4.7 mm. Colorado (Boulder Co.).....*longicornis* n. subsp.

Body smaller, relatively much more slender and parallel, dark red-

brown throughout, sculptured as in *spissicornis* but still more finely; head relatively a little smaller, the very large eyes similar though still more prominent, separated by barely over one-half more than their own width; median line much more finely and feebly though evidently canaliculate; antennæ (♂) of the same structure and with similar dense erect vestiture but barely three-fourths as long as the body and less incrassate basally through the basal five joints, second joint relatively longer than in the preceding, twice as long as wide and distinctly more than half as long as the third, the latter less greatly exceeding the fourth; prothorax similarly transverse but differing notably in shape, not parallel, the sides rounding strongly at apex, thence parallel and nearly straight from apical fifth to barely behind the middle, then rounding and strongly converging to the base, which is very much narrower than the apex, the densely punctulate surface much more even, the impressions of the preceding barely traceable; scutellum more obtuse; elytra similarly a little wider than the prothorax, very elongate but not at all wider at the humeri, the sides straight, the apex conjointly circularly rounded; legs more slender and a little shorter, the hind tarsi not quite three-fifths as long as the tibiæ, similar in general structure but very much more slender. Length (♂) 16.7 mm.; width 4.2 mm. New Mexico (Las Vegas),—Meeske.....*gracilipes* n. sp.

It would seem as though the tuberculiform swelling at the hinder part of the thoracic impression of *impressa*, would have been alluded to by LeConte, even in the very short diagnosis of *aspera*, if present in the latter; it is conspicuous in *impressa* but almost obsolete and with much more anterior position in *rectipennis*.

Criocephalus Muls.

The following three species belong to the *asperatus* group, having the third joint of the hind tarsi emarginate only at apex:

***Criocephalus honduranus** n. sp.—Form, dark coloration and general sculpture nearly as in *asperatus* but less stout; head and antennæ nearly similar, except that the dense punctures of the former are finer and the basal dorsal swelling more pronounced, also in that the antennæ are a little longer and more coarsely sculptured, having the fringe along the under part of all the joints nearly as in the male of *asperatus*; prothorax distinctly different, being very nearly as long as wide, hexagonal, angulate at the middle, the surface with a large deep rounded concavity at the middle near the base, a deep elongate concavity enclosing a shining impunctate anterior spot near each side, and a transversely crescentic subapical concavity; surface minutely, extremely densely punctate but with only very few small and widely dispersed granules anteriorly, becoming but slightly more pronounced toward the sides; elytra nearly similar but with the raised lines more feeble; legs a little shorter but with notably longer tarsi, the posterior more than three-fourths as long as

the tibiae, with the second joint distinctly more than twice as long as wide. Length (σ) 23.5 mm.; width 6.5 mm. Honduras.

Differs from *asperatus* in its much less transverse prothorax, less than half as asperate pronotum and much longer tarsi, also in having the eighth antennal joint only half as long as the seventh and proportionally thinner than in that species. This can hardly be the form alluded to by Bates (Biol. Cent.-Amer., Col., V, p. 239) from Chiapas, Mexico, as agreeing precisely with Nebraskan specimens of *asperatus*.

Criocephalus filitarsis n. sp.—Smaller and more slender than *asperatus*, similar in color and punctuation, black and rather dull throughout; head as in *asperatus*, except that the eyes are less transverse and less widely separated; antennae (φ) shorter and more slender, otherwise nearly similar, the second joint just half as long as the third; prothorax smaller and less transverse, prominent and narrowly rounded at the sides well behind the middle, the sides thence but feebly converging, being almost parallel for a short distance, then broadly rounded to the apex, which is fully as wide as the base; surface not impressed medially, having a moderate shining impression near each side and a deep rounded pit medially near the base, having toward the sides a very few small and widely dispersed shining tubercles; elytra much wider than the prothorax, narrowed but very slightly from base to the circularly rounded apex, the sculpture as in *asperatus*, except that the sublateral raised line is also evident; legs shorter and much more slender, the hind tarsi extremely slender, two-thirds as long as the tibia, the second joint nearly three times as long as wide, the third almost twice as long as wide. Length (φ) 20.0 mm.; width 5.3 mm. Texas (El Paso),—Dunn.

This species differs greatly from the allied *asperatus* in its smaller size, slighter build, much less impressed and very much less asperate prothorax which has a different outline, the apex being narrower than the base in that species, and more particularly in the very slender tarsi and in the form of the fifth abdominal segment above and beneath, which is much narrower and relatively longer in *filitarsis*.

Criocephalus cavicollis n. sp.—Smaller in size than the preceding and with relatively smaller head and prothorax, nearly similar in its very dense punctuation and the raised lines of the elytra but somewhat more shining, dark piceous-brown throughout; head smaller, the median line only finely impressed, the eyes separated by over three-fourths more than their width; antennae (σ) very slender, more than two-thirds as long as the body, the third joint fully twice as long as the second, the eighth about three-fourths as long as the seventh and only very slightly thinner; prothorax nearly one-half wider than long, the sides rather prominent but narrowly rounded well behind the middle, thence distinctly converg-

ing and nearly straight to just behind the apex, where they round rapidly to the latter, which is very nearly as wide as the base; surface with a very large deep concavity occupying almost its entire extent, the bottom of the concavity more deeply impressed medially and laterally and also transversely more impressed near its anterior border, not inclosing impunctate spots, the convex surface laterally with a few very small acute granules on the flanks behind the middle; elytra parallel, nearly two-fifths wider than the prothorax; legs unusually short, slender, the hind tarsi with the second joint more than twice as long as wide. Length (♂) 17.0 mm.; width 4.8 mm. Colorado,—Kemp.

Not closely allied to any other species. The exact locality is unfortunately not recorded by Prof. James F. Kemp, who very kindly sent it to me.

The two following species are also allied to the preceding in tarsal structure but belong more especially to the *agrestis* type:

Criocephalus lacustrinus n. sp.—Rather stout, dull, piceous-black, very finely and densely punctured throughout; head obtusely, strongly canaliculate but not at all behind the eyes, the occiput tumid dorsally; antennæ (♀) scarcely extending to basal fourth of the elytra, slender and filiform, black, nearly as in *agrestis*; prothorax scarcely more than two-fifths wider than long, slightly widest and laterally rounded subprominently a little behind the middle, the sides thence broadly rounded and moderately converging to the apex, more rapidly and sinuously converging to the base, which is but little narrower than the apex, the latter transverse; surface nearly as in *agrestis* but with the three pits much shallower and the lateral asperities less developed; elytra two and one-half times as long as wide, tapering feebly from base to the rather narrowly rounded apex and with very slightly arcuate sides, a fifth wider than the prothorax, the surface very minutely, evenly and densely punctate, without admixed larger punctures except basally and with the raised threads subobsolete, joining each other at apical third. Length (♀) 24.6 mm.; width 7.2 mm. Wisconsin (Bayfield),—Wickham.

Differs from *agrestis* in its finer, denser, more even elytral sculpture and very feeble threads, these being unusually strong in that species as in *asperatus*. It also differs markedly in its less transverse prothorax, with feebler impressions and less angulate sides.

Criocephalus cervinus n. sp.—Form more slender, less densely dull in lustre, of a pale red-brown throughout, the legs and antennæ concolorous; head nearly as in *lacustrinus*; antennæ (♂) slender, subfiliform, extending nearly to apical fourth of the elytra, in structure nearly as in *agrestis*; prothorax moderate in size, nearly one-half wider than long, the sides rounded and scarcely at all prominent well behind the middle, broadly rounded and subparallel for some distance thence anteriorly, rounded at apex, very rapidly and sinuously converging basally, the base distinctly narrower than the apex; surface very densely punctate, with pits as in

agrestis but very much shallower, the lateral asperities rather larger but less numerous; elytra nearly as in *agrestis* but more finely and uniformly, extremely densely punctate and with the raised threads much feebler though stronger than in the preceding. Length (σ^7) 19.5 mm.; width 5.4 mm. Indiana,—Levette.

This species differs from *agrestis* in its more slender outline, smaller, less deeply trifossate and laterally much less angulate prothorax, with the punctures less minute, more minute and uniform elytral sculpture, with the threads feebler and in the relatively shorter second antennal joint, this being only one-half as long as the third. *Agrestis* is notably more arctic in distribution, my series being from Lake Superior, Maine, Labrador and Ungava.

Tetropium Kirby.

This genus is well distinguished from any of those preceding by its divided eyes, the fine elevated isthmus connecting the upper and lower portions having no facets. The following has been recently received:

Tetropium columbianum n. sp.—Rather slender, dull in lustre, everywhere very densely punctate, the elytra extremely finely, the pronotum less so and the head rather strongly; color black, the elytra fulvous-brown, the entire under surface deep black; femora black, the tibiae piceous, the tarsi slightly paler; head small, the median line finely, deeply sulciform; eyes very widely separated, small and finely faceted; prothorax nearly as long as wide, parallel, the apex and base transversely truncate and equal; sides evenly and strongly rounded; surface very convex, extremely densely punctate throughout, not impressed, except a triangular subtransverse pit before the base; scutellum black, densely and minutely punctate, very obtuse; elytra more than a fourth wider than the prothorax, parallel, with straight sides, individually abruptly and very obtusely rounded at tip, opaque, the two discal raised lines barely traceable; under surface shining, finely, not densely punctate and with rather long coarse ashy hairs; hind tarsi very slender, three-fourths as long as the tibia, nearly as in *Criocephalus*, the third joint cleft almost to the base. Length (σ^7) 11.8 mm.; width 3.0 mm. British Columbia (Inverness),—communicated by Mr. J. H. Keen.

Differs from *parallellum*, to which alone it is allied, in its smaller head, broadly rounded and not angulate sides of the prothorax, more evenly punctate, less pubescent and medially unimpressed pronotum, much more broadly obtuse scutellum and other characters. The antennæ are missing in the type.

Smodicum Hald.

A remarkable genus, having male sexual characters affecting the prosternum in much the same way as in *Stenosphenus*. It is considered a distinct group of the Asemmini by LeConte. The antennæ are nearly similar in length in the male and female, though stouter toward base in the former sex, in which also the thighs are noticeably thicker.

Smodicum convergens n. sp.—Elongate, parallel, depressed, shining, pale red-brown in color; head and eyes nearly as in *cucujiforme*, the antennæ much longer, the fifth joint very much longer than the third, the latter barely longer than the fourth; sides of the head behind the eyes virtually parallel; prothorax rather longer than wide, somewhat swollen behind the middle, the sides thence feebly converging and nearly straight to the very short apical arcuation, the apex and base equal in width; surface wholly unimpressed, rather strongly and loosely punctate, with a narrow impunctate median line; scutellum small, rounded; elytra parallel, with straight sides, nearly a third wider than the prothorax, almost as in *cucujiforme*, slightly dehiscent near the apex; legs much longer than in that species. Length (♀) 10.0 mm.; width 2.3 mm. Texas.

Larger than *cucujiforme* Say, deeper in coloration, with less parallel and unimpressed prothorax, longer antennæ and much longer legs. I think that the systematic position of *Smodicum* was correctly adjudged by LeConte and that the affinities with *Oeme*, suspected by Bates, do not evince themselves at all conclusively.

Tribe CALLIDIINI.

A group of Cerambycids separable from the Asemmini, according to LeConte, by the membranous ligula. The eyes are always finely faceted, but in some genera such as *Physocnenum*, *Rhopalopus* and *Hylotrupes*, the second antennal joint has no such development as it has in the Asemmini or even in *Callidium* and related genera.

Physocnenum Hald.

A number of distinct species of the *brevilineum* type exist in our collections, of which the two following seem to be hitherto undescribed:

Physocnenum compressipes n. sp.—Form as in *brevilineum* but darker and more obscure in coloration and without the more sparsely punctate sutural pale region before the middle of the elytra in that species, black, dull in lustre; head as in *brevilineum*, the antennæ (♂) nearly as long but stouter, the outer joints shorter, the last not longer than the preceding

and only about two-thirds as long as in that species; prothorax similar, except that the sides from behind the middle to near the apical margin are much more parallel, the punctureless sublateral spots near the base smaller and the smooth tumid median line toward base only partially evident; scutellum parallel, obtuse at apex, very densely punctate and pubescent; elytra distinctly wider than the prothorax, parallel, feebly narrowing near the obtuse apex, very flat, blackish, finely and very densely punctate almost throughout, the two median lateral pale lines distinct but the more basal line of *brevilineum* very faint; prosternum (♂) finely, transversely punctato-rugulose; thighs strongly dilated and much compressed. Length (♂) 10.5 mm.; width 3.0 mm. Wisconsin (Bayfield), —Wickham.

To be known at once from the same sex of *brevilineum* by the very much more compressed femoral enlargement, less slender antennæ, absence of sutural pale marking on the elytra, confused and not linear arrangement of the punctures just within the exterior pale marginal crest of the elytra and, finally and very obviously, by the sexual characters affecting the prosternum of the male, the portion before the coxæ in *brevilineum* being coarsely and sparsely punctate in that species and not finely, transversely punctate-rugose. In *brevilineum* the elytra have more or less of a violaceous reflection, especially toward tip, but this is wholly wanting in *compressipes*.

Physocnemum densum n. sp.—Larger than *brevilineum* and somewhat stouter, similar in coloration and ornamentation but differing in sculpture; head nearly similar, the antennæ (♀) a little longer, the tenth joint more than three times as long as wide; prothorax of like shape but somewhat larger, without velvety lustre, the sublateral smooth spaces near the base less linearly oblique and more diffused, the tubercles larger and less acute, the punctures small but deep, closely crowded, except in the smooth spaces, but distinct, each with a short coarse dark hair; elytra similar in general but with the punctures apically not becoming so sparse and each with a much shorter and less erect hair, the apices more broadly rounded; abdomen much less closely punctulate; last dorsal segment less punctate and subglabrous, the legs similar. Length (♀) 17.0 mm.; width 5.0 mm. Kansas.

The most important distinctive character, when comparison is made with the female of *brevilineum*, is the sculpture of the pronotum; in that species the punctures become exceedingly crowded and the deep black pubescence, especially medially and anteriorly, becomes so dense as to wholly conceal the sculpture and produce a homogeneous velvety-black surface. The examples of *brevilineum* in my collections agree completely with the descriptions of Say and LeConte and are from Dakota and Nebraska.

Hylotrupes Serv.

The species *bajulus* Linn., was probably introduced into the Atlantic States from Europe and has become abundant. The male sexual characters are very remarkable, reversing some of the ordinary tendencies in that sex observable elsewhere; for example, the prothorax is much more transverse and more swollen at the sides in the female than in the male and is very finely, closely sculptured, while in the male it is coarsely and sparsely punctate. It varies in size to an extraordinary degree and it is difficult to believe that some of the minute forms, such as that published by Bland (Proc. Ent. Soc. Phila., 1862, p. 8) under the name *Callidium*? *albofasciatum*, having a length of only 6 mm., and of notably slender outline, may not prove to be a distinct species; the described antennal structure shows that it can belong to no other genus than *Hylotrupes*. I have a European male of *bajulus* before me that measures only 8.2 mm.

Anocomis n. gen.

The unusual and very distinctive antennal structure of *Hylotrupes bajulus* Linn., shows that the *Callidium ligneum* of Fabricius, cannot be generically associated with it, especially as its entire habitus is different. *Ligneum* has always been a puzzle to taxonomists, not only as to its systematic position but in regard to the diversity of form and coloration that it exhibits. Haldeman listed it under *Callidium*, but LeConte in 1852 transferred it to *Physocnemum* Hald.; subsequently it was assigned to *Semanotus* and then to *Hylotrupes*, but, as a matter of fact, it should be considered a distinct generic type and the above name is here proposed.

The various forms, which have all been included under *ligneum*, have never been carefully studied in series and are generally misunderstood. The coloration appears to be not very variable, but on the contrary is often quasi-structural in nature. For example in all the normally colored examples before me, the punctures on the pale parts of the elytra are very coarse and sparse, but within the limits of the two rounded dark spots and on the posterior black portion of the elytra they become much less coarse and decidedly more close-set, thus indicating that the dark coloration does not

arbitrarily expand and contract in the way hitherto supposed. Moreover, in the black bifasciate species, it is difficult to see how the pattern of elytral coloration could have been derived from the normal type, and the discovery of a rather marked antennal structural peculiarity in one of these black forms would seem to indicate that it is not a color variation but a distinct species.* I would therefore separate the material before me into the six following species and subspecies:

Elytra pale, black in about apical third and each also with a rounded spot of the same tint at the centre of the pale area.....2

Elytra wholly black, crossed by two pale transverse fasciæ.....3

2—Form narrow, parallel, very obtusely rounded behind and but feebly convex; head rather small; eyes widely separated, small, almost divided; front convex, not canaliculate, rather coarsely, very densely punctured; antennæ about as long as the body (♂) or much shorter (♀), joints three to five increasing in length (♂) or with the fourth but little longer than the third and both much shorter than the fifth (♀), outer joints compressed, gradually more slender; prothorax small, wider than long, angularly prominent laterally at the middle, the sides thence feebly converging and evenly arcuate to the apex and similarly converging but broadly sinuate to the base, the surface very coarsely, densely punctate and with five moderately defined callous polished spots; scutellum dark, punctate, obtusely ogival; elytra more than twice as long as wide, coarsely, loosely punctate, more finely and closely in the dark areas; legs moderate. Length (♀) 10.0 mm.; width 3.2 mm. Pennsylvania. [*Callidium ligneum* Fabr.,—Mant. Ins., I, p. 153].....*lignea* Fabr.

A—Smaller than the preceding, the black apical area occupying nearly two-fifths of the elytra; head similar; antennæ (♂) distinctly incrassate basally, the second joint less than a third as long as the third, transverse, three to five increasing rather rapidly in length, sixth equal to the fifth, six to eight decreasing very slowly, the last slender, simple, only very slightly longer than the tenth; prothorax nearly as in *lignea* but with the central callous spot more prolonged anteriorly as a rule along the median line; scutellum much narrower; elytra shorter, twice as long as wide, similarly much wider than the prothorax and of nearly like sculpture, except that the punctures of the dark areas are still smaller and closer; legs rather short and slender, black. Length (♂) 7.7 mm.; width 2.5 mm. Colorado. . . . *parvicollis* n. subsp.

Form less parallel and more convex, much broader, black throughout, except the elytra, the femora black, tibiæ and tarsi dark brown; surface rather more shining than in the preceding; head larger than in the two preceding, not so narrowed behind the eyes and less confluent punctate, the punctures (♂) slightly separated; an-

* The eastern species live in the wood of cedars, according to Mr. Jülich, and the western in the wood of the Sequoia (Ent. Amer. I, p. 97).—Ricksecker.

tennæ not black but dark brown, of similar structure but rather longer, fully as long as the body (♂) and more even in thickness throughout, compressed, the last joint longer, much exceeding the tenth; prothorax larger and more transverse, similar though less strongly angulate at the sides, coarsely and densely but not so confluent punctate, the lateral callous spots broadly united longitudinally and also transversely at base with the median callus, which is prolonged anteriorly; scutellum much broader and very much more obtuse, wider than long; elytra very much wider than the prothorax, less than twice as long as wide (♂) or a little more than twice (♀), similar otherwise, though more narrowed at tip and with the central spot more elongate-oval, oblique and inconsistent; legs (♂) rather long, with the thighs notably thicker than in the shorter legs of the female. Length (♂, ♀) 10.5–15.0 mm.; width 3.5–4.8 mm.; length of hind tibia (♂) 3.8 mm. California.

ampla n. sp.

A—Similar but very much narrower, with the legs (♂) shorter and pale throughout and with the femora less inflated; antennæ similar but more slender throughout, the second joint a little longer, as long as wide, almost half as long as the third and not a third as long as in the preceding, paler in color throughout. Length 9.3 mm.; width 2.6 mm.; length of hind tibia (♂) 3.0 mm. California. *angusta* n. subsp.

3—Body rather broad in form, strongly shining, deep black, the testaceous fasciæ of the elytra near basal fourth and just behind the middle; head better developed than in *lignea*, nearly as in *ampla* but more densely and confluent punctate; antennæ (♂) fully as long as the body, notably and gradually stout basally, black, the second joint longer than wide, almost one-half as long as the third, fourth equal to the third and a little shorter than the fifth, five to eight decreasing almost imperceptibly in length but rather rapidly in thickness, the last very slender, longer than the tenth, or (♀) two-thirds as long as the body, more slender and equal throughout, the eighth joint fully three-fourths as long as the seventh; prothorax differing from the preceding forms in being more narrowed basally than apically, less prominent medially at the sides, otherwise nearly similar; scutellum obtuse, as wide as long; elytra narrowed from base to apex, barely so in the female, coarsely and loosely punctate throughout and more than twice as long as wide in both sexes, the fasciæ interrupted at the suture; legs black, the thighs not larger in the male than in the female. Length (♂, ♀) 9.0–12.0 mm.; width 2.8–4.0 mm. California. [*Hylotrupes litigiosus* Csy.,—Ann. N. Y. Acad., VI, p. 25]. *litigiosa* Csy.

Body broad as in the preceding but parallel, the elytra not narrowed from base to apex, black, still more shining and with the bristling hairs longer and more conspicuous anteriorly and on the antennæ; pale fasciæ in nearly the same position but broader and not interrupted at the suture, the anterior not straight but crescentic, the attenuated ends flexed forward as far as the base in a fine line just

within the humeri; head nearly similar but gradually increasing in width to the base, where it is about as wide as across the eyes; antennæ (♀) notably more slender and very pale brown in color throughout, the last four joints abruptly much more distinctly shorter than the seventh and more abbreviated, the eighth only about twice as long as wide; prothorax shorter and more transverse, similarly more narrowed basally than apically but differing in being widest well before and not at the middle; surface nearly as in the preceding, the five callous spots isolated amid the dense coarse punctures; scutellum smaller, obtusely parabolic, as wide as long; elytra much wider than the prothorax, about twice as long as wide, very coarsely, loosely punctate throughout; legs pale brown, the femora blackish, the tarsi very slender. Length (♀) 10.0 mm.; width 3.1 mm. Maine.....*terminata* n. sp.

Although at first glance there seems to be but little diversity in the head and prothorax, closer observation shows not a little, especially in the shape of the latter and in the formation toward base in the former.

Dr. Horn states (Tr. Am. Ent. Soc., 1883, p. 289) that the *Callidium nicolas* of White, "is merely the dark form of *Hylotrupes ligneus* Fab." As there are several dark forms, I am unable to determine which, if either, of the above black species should be identified as *nicolas* White.*

Hemicallidium n. gen.

The type and only known species of this proposed new genus is the *Physocnemum amethystinum* of LeConte (Proc. Acad. Phila., VI, p. 234). It differs from *Hylotrupes*, where it is now listed, in its different antennal structure, conforming in this respect with *Anocomis* preceding, in its very much larger ocular emargination, which however does not come quite so near to completely dividing the eyes as it does in *Anocomis*, in the less widely separated coxæ, more slender femora and, as in *Anocomis*, much more securiform palpi; also in having no eroded spots on the elytra, the latter being in form and sculpture very nearly as in the restricted *Callidium*. It differs from *Anocomis* in the very rapidly and strongly, basally

* The description of *nicolas* given by White (Cat. Col. Br. Mus., VIII, p. 321) runs as follows: Of a blackish-brown; head punctured and with scattered grayish hairs. Thorax punctured irregularly, with five smooth spaces on the back, two in front, three behind, the central the largest; scutellum black. Elytra of a reddish-brown, with a transverse ochrey band a little behind the middle and a narrow ochre-colored margin from the shoulder to the band. Hab. —. Length 4 lines.

constricted prothorax, with the base briefly subtubulate as in *Merium* and *Hylotrupes*. The system of pronotal callosity resembles somewhat that of *Anocomis*, but differs radically from *Hylotrupes*. *Hemicallidium amethystinum* has the elytra deep and pure blue in color, with only the faintest violaceous lustre in certain lights, the remainder of the body deep polished black; it seems to be a rare insect, my single female example coming from North Fork, Madera Co., California.

Phymatodes Muls.

The eyes in this genus are always very deeply emarginate and sometimes divided, but there are so many intermediate stages that but little use can be made of this character in classification; a complete division is scarcely suggested in *variabilis* or in the *obscurus* group, but is nearly complete in *vulneratus* and *decussatus*, virtually complete in *varius* and entirely so in *amœnus* Say. The hind tarsi however have divergencies of form which are available as subgeneric criteria. There are scarcely any definite structural differences between *Callidium*, as restricted by LeConte, and *Phymatodes*, aside from general facies, where the distinction is very pronounced and except perhaps in the more widely separated middle coxæ of *Callidium*, but I find the deep transverse groove behind the frontal margin of *Callidium* is only feebly or not at all developed here. We might suggest the four following groups:

Hind tarsi long and slender, the first joint equal to the entire remainder.

Group I

Hind tarsi slender but with the first joint, though very elongate, much shorter than the remainder; elytra generally finely pubescent and punctulate. Group II

Hind tarsi very small, the first joint not or scarcely more than twice as long as wide. 2

2—Body narrower, more convex, the elytra bifasciate, very sparsely punctulate; eyes not divided; middle coxæ approximate, the mesosternal process narrow and very finely acuminate. Group III

Body less convex, generally broader, the elytra never fasciate nor finely, densely pubescent, strongly punctate; eyes completely divided in the typical species, undivided in others; middle coxæ well separated, the mesosternal process broadly triangular. Group IV

Group II is rather heterogeneous but the others are fairly uniform within themselves in general habitus, though variable in the eyes as usual.

Group I.

Phymatodes in sp.

Our only species assignable to this group is the well known *variabilis* Linn., of rather large size and very elongate form, introduced into the Atlantic regions from Europe through commerical intercourse.

Group II.

Pœcilium Fairm.

This group may be subdivided into several sections as follows:

- Upper surface uniform in coloration.....2
 Upper surface uniform in color, except that the elytra became nubilously paler basally.....5
 Upper surface not or but seldom uniform in coloration and having a single pale transverse fascia at the middle of the elytra.....6
 Upper surface as in the preceding, except that the elytra have two transverse pale fasciæ.....7
 2—Prothorax rather loosely and irregularly punctate, generally with confused smooth callous areas.....3
 Prothorax densely punctate, without large callous spots.....4
 3—Color blackish-brown above, generally without very pronounced æneous tinge, paler and uniform beneath, the legs still paler and flavate-brown; punctures throughout strong though not very coarse, separated by about their own diameters anteriorly, not quite so strong and two or three times as sparse on the elytra; pubescence everywhere notably long, pallescent; prothorax slightly transverse, obtusely subangulate at the sides just before the middle, narrower at base than at apex; elytra nearly one-half wider than the prothorax, parallel, more than twice as long as wide, very obtuse at apex; legs well developed, the femora much dilated in the male. Length (♂) 9.4 mm.; width 2.9 mm. New York. [*Callidium æreum* Newm.,—Ent. Mag., V, 1838, p. 393; *C. pallipes* Hald.,—Tr. Am. Phil. Soc., X, 1847, p. 37].....**æreus** Newm.
 Color æneo-piceous, elongate, sparsely pubescent; prothorax shorter than wide, rounded at the sides, punctulate, margined at apex and base; elytra slightly wider than the prothorax, very shining, sparsely punctate; femora strongly clavate; antennæ rufescent at base. Length 7.5 mm. Near Fort Vancouver. [*P. æneus* Lec.,—Proc. Acad. Phila., 1854, p. 18].....**æneus** Lec.
 4—Form elongate, fusco-piceous in color, sparsely pubescent; head densely punctulate; prothorax slightly shorter than wide, rounded at the sides, densely punctate, with a smooth median line; elytra rather densely, less finely punctate; abdomen and legs testaceous. Length 10.7 mm. California (Punto de los Reyes). [*Callidium infuscatum* Lec.,—Proc. Acad. Phila., 1859, p. 285]..**infuscatum** Lec.
 Form nearly similar, larger in size, blackish-brown, not at all shining,

clothed with suberect fuscous hairs; head and prothorax extremely densely punctate, the latter sparsely pilose, nearly as long as wide, rounded at the sides, narrowed posteriorly, with an obsolete median line and a posterior sublateral callous spot smooth; elytra sparsely punctate, the punctures basally large, fine posteriorly; femora strongly incrassate, the tibiæ with long sparse hairs. Length 12.0–13.75 mm. California (Tejon). [*Callidium obscurum* Lec.,—Proc. Acad. Phila., 1859, p. 79].....**obscurus** Lec.

Form rather broader, much larger, piceous-black throughout, slightly shining; head very densely, granularly punctate, the eyes far from divided; antennæ (♂) four-fifths as long as the body, slender, the second joint nearly twice as long as wide and one-half as long as the third, last joint shorter than the tenth, simple, slender; prothorax fully as long as wide, parallel, with broadly and subevenly rounded sides, more converging very near the base, which is but little narrower than the apex; surface not coarsely, very densely and granularly punctate, becoming loosely and more coarsely so near the apex and very densely and granularly rugose on the flanks and beneath, the median line narrowly smooth and but feebly tumescent basally, the surface also broadly and very feebly tumescent near lateral fourth at or just in front of the middle, the summit subimpunctate and shining; basal smooth spots wanting; hairs erect, rather long but very sparse; scutellum extremely minutely and densely punctate and closely pubescent; elytra long, parallel, with straight sides, rapidly very obtusely and almost conjointly rounded at apex, two and one-half times as long as wide and one-half wider than the prothorax; surface subdepressed, very finely not densely punctate, scarcely less finely so basally, each puncture with a rather coarse but short suberect blackish hair; sutural angles narrowly rounded; legs long, the femora strongly clavate; abdomen smooth and polished, extremely minutely and remotely punctate, the fifth segment very short, broadly sinuato-truncate. Length (♂) 15.5 mm.; width 4.5 mm. California (San Diego).....**grandis** n. sp.

5—Parallel, notably depressed, dark smoky-brown, dull in lustre, minutely, extremely closely punctulate, more sparsely on the elytra, which are less dull, except in an opaque region behind a nubilously pallid area occupying not quite basal half of each and not involving the base or a gradually narrowing sutural region from the base, the said opaque area extending posteriorly to very near the apex; pronotum even, without callous spots but with a narrow smooth line broadening basally, the sides broadly and obtusely angulate at the middle; base much narrower than the apex; elytra much wider than the prothorax; pubescence throughout extremely short, close, not at all erect on the prothorax; thighs strongly clavate apically but scarcely more so in the male than in the female. Length (♂, ♀) 6.8–8.0 mm.; width 1.8–2.4 mm. Massachusetts and Colorado to southern Alaska. [*Callidium dimidiatum* Kirby,—Fn. Bor.-Am., IV, p. 173; *Clytus palliatus* Hald.,—Tr. Am. Phil. Soc., X, p. 41; *Callidium mannerheimi* Lec.,—Rept. Expl. and Surv., 1857, p. 60; (?) *kalmi* Schönh.,—Syn. Ins., I, 3, p. 442].....**dimidiatus** Kirby

6—Form suboblong, moderately convex, slightly shining, except in a rather large area just behind the elytral fascia, where the surface loses its punctures but becomes finely and very densely, granularly rugose and opaque; color black, the meso- and metasterna pale testaceous, the abdomen piceous, the legs pale red-brown; pubescence everywhere rather long, pale but not dense; head not coarsely but very deeply and closely punctate, the eyes not quite divided; antennæ (♂) three-fourths as long as the body, slender, pale, the second joint two-fifths as long as the third; prothorax slightly shorter than wide, obtusely angulate at the middle of the sides, scarcely more narrowed basally than apically, the base truncate; apex broadly arcuate, the surface convex, even, with rather small deep perforate and close-set punctures, the narrow smooth median line obliterated medially; scutellum extremely minutely and densely punctate and closely pubescent; elytra pale anteriorly, blackish behind the fascia, but little more than twice as long as wide, narrowing just visibly from the rather prominent humeri to the broadly and abruptly obtuse apex, the punctures small but strong, close in the testaceous and rather shining area between the white and arcuate, narrowly suturally interrupted fascia and the base, very fine and sparse at the polished apex; femora strongly clavate. Length (♂) 8.5 mm.; width 2.5 mm. California. [*P. vulneratus* Lec.,—Rept. Expl. and Surv., 1857, XII, p. 60].....**vulneratus** Lec.

Form narrower, the size much smaller, similar in coloration, except that the dark parts are piceous-black and the white elytral fascia narrower and more widely interrupted at the suture; lustre much more shining, the pubescence very much shorter and finer, sparse and inconspicuous; punctures of the head and prothorax smaller and much less close, separated by more than their diameters on the latter, becoming fine and sparse medially and apically, the smooth median line indistinct except basally; prothorax nearly as long as wide, the outline nearly as in the preceding but much more narrowed basally; scutellum with extremely minute dense punctulation and very minute close hairs, much smaller than in *vulneratus*; elytra perfectly parallel, only about a third wider than the prothorax, more than twice as long as wide, abruptly and very obtusely rounded at apex, the punctures coarse, impressed, separated by fully their own diameters and much larger than in *vulneratus* anteriorly, becoming small, feeble and closer, with the surface feebly subrugulose, behind the fascia, this area rather shining and not opaque as in *vulneratus*, excessively minute and remote at the polished apex; legs shorter than in the preceding, the apical femoral swelling less developed. Length (♂) 5.6 mm.; width 1.4 mm. California (Sta. Cruz Mts.).

concinus n. sp.

7—Punctures of the upper surface small and close-set, generally sparser discally on the pronotum.....8

Punctures of the upper surface notably coarse.....10

8—Posterior fasciæ of the elytra very oblique; form narrow and notably elongate; color deep black throughout, with the part of the elytra before the anterior fascia faintly piceous, the legs black typically;

pubescence very short; antennæ (♂) long and slender, pale, fully as long as the body; prothorax slightly transverse, parallel, with very evenly rounded sides, the feebly granuliform punctures almost wanting broadly toward the middle of the evenly convex pronotum, the base but barely narrower than the apex; scutellum very densely punctulate and ashy-pubescent; elytra evidently more than twice as long as wide, a fifth wider than the prothorax, the sides very feebly converging from base to the very obtuse apex, the punctures minute and extremely dense, less so at apex and decidedly more distinct and sparser, with the hairs more erect and stiffer, between the anterior band and the base; femora strongly clavate, with the legs rapidly shorter postero-anteriorly. Length (♂) 7.6 mm.; width 2.2 mm. California (locality unrecorded). [*P. obliquus* Csy.,—Ann. N. Y. Acad. Sci., VI, p. 26].....**obliquus** Csy.

Posterior fasciæ similarly very oblique; body relatively shorter, broader and more depressed, black, the anterior parts and the elytra before the anterior fascia sometimes ferruginous; head finely, closely punctulate; antennæ (♂) slender and filiform, pale to blackish, not quite as long as the body, the joints very much shorter than in *obliquus*; prothorax shorter than in that species and more narrowed basally, more strongly rounded at the sides, the base much more considerably narrower than the apex, the sculpture nearly similar, rather closely and roughly punctured laterally, broadly subimpunctate medially; elytra but little more than twice as long as wide, subparallel and nearly straight at the sides, very obtuse at apex, relatively very much broader than in *obliquus*, being more than a fourth wider than the prothorax, almost similarly though somewhat more densely and less finely sculptured; legs differing but little sexually, the male femora less swollen than in *obliquus*; abdomen similarly polished and minutely, very sparsely punctulate and setulose. Length (♂, ♀) 6.2–7.7 mm.; width 2.0–2.7 mm. California (Sta. Clara Co.),—Harford.....**harfordi** n. sp.

Posterior fasciæ transverse or nearly so.....9

9—Body slender, the elytra notably impressed suturally behind the scutellum, black or piceous-black, the pronotum more or less, anterior two-fifths of the elytra and the anterior part of the under surface—usually the pro- and mesosterna,—pale testaceous; pubescence very short, a little longer, more erect and bristling anteriorly as usual; antennæ (♂) pale, very slender, as long as the body, or (♀) three-fourths as long as the body, with the tenth joint two and one-half times as long as wide; prothorax evidently shorter than wide, rounded at the sides, more narrowed basally than apically, sparsely punctate medially, the smooth line broad and subconvex basally; elytra in general nearly as in the preceding but narrower; legs differing sexually much less than in the preceding, the femora moderately swollen, much shorter (♂) and less swollen than in *obliquus*. Length (♂, ♀) 5.3–6.8 mm.; width 1.5–1.9 mm. California (Sta. Cruz Mts.). [*P. decussatus* Lec.,—Rept. Expl. and Surv., Ent., XII, 1857, p. 60].....**decussatus** Lec.

Body rather stout, the elytra not or scarcely at all impressed behind the

scutellum; color wholly black, perhaps sometimes paler anteriorly after the fashion of the preceding species, more closely punctate; antennæ (♀) very slender, blackish, three-fourths as long as the body, the tenth joint nearly three times as long as wide; prothorax notably larger than in the two preceding, wider than long, rounded at the sides, more narrowed at base, the punctures strongly granular and rather close-set throughout, not sparser along the middle but less dense in a small spot at each side and a little before the middle, also in a narrow impunctate line toward base; elytra scarcely a fifth wider than the prothorax, nearly as in the preceding in regard to form, sculpture and pubescence. Length (♀) 9.0 mm.; width 2.8 mm. Pennsylvania. [*Callidium varium* Fabr.,—Spec. Ins., I, p. 241; *versicolor* Gmel., ed. Linn., I, 4, p. 1852—Lake Superior].

varius Fabr.

A—Similar to the preceding in general structure, sculpture and in the short vestiture of this group, but rather narrower and less convex, pale rufo-ferruginous, the elytra black from a little before the anterior white band to the apex (♂), or pale only at base and thence more narrowly along the suture to the line of the anterior band (♀); abdomen and the greater part of the metasternum black; legs very pale; antennæ (♂) not quite as long as the body, or (♀) a little more than two-thirds as long as the body, with the tenth joint only a little more than twice as long as wide; prothorax and elytra nearly similar in form and sculpture; legs (♂) long, with strongly inflated femora, the posterior much larger than the two anterior, or (♀) more equal and smaller. Length (♂, ♀) 6.7–8.0 mm.; width 2.2–2.3 mm. Missouri. . . . **diffidens** n. subsp.

Body relatively broader, more depressed and with much smaller anterior parts than in *varius*, deep black and somewhat shining throughout, the bicolored elytra not evident in a large series; head densely sculptured; antennæ (♀) not more than two-thirds as long as the body, with shorter joints than in *varius*, the second relatively longer, being about half as long as the third, or (♂) nearly as long as the body, pallid with nubilously black distal parts of the joints, the second still almost half as long as the third; prothorax smaller than in *varius* and not so transverse or so strongly rounded at the sides, similarly closely, granularly punctate and with three longitudinal callous and smooth areas, the medial more basal; elytra barely more than twice as long as wide, parallel and straight at the sides, very obtuse at apex, fully a fourth (♂) to a third (♀) wider than the prothorax, the vestiture nearly as in *varius*, decumbent and close posteriorly, longer, coarser, sparser and less inclined basally. Length (♂, ♀) 5.7–8.0 mm.; width 1.8–2.7 mm. Massachusetts (Cohasset),—Frost. **latipennis** n. sp.

10—"Dark brown; antennæ, under side and anterior portion of elytra lighter, the latter bearing two fasciæ, the anterior acutely angulate, the posterior broader, oblique and arcuate: the entire insect clothed with long fine hair, distantly placed, except on the elytral fasciæ. Head and thorax coarsely punctate, elytral punctures very strong. Thorax rounded and somewhat protuberant at the sides, moderately

convex on the disc; elytra parallel to one-third, thence slightly arcuately expanded to near the apex, which is broadly rounded, flattened on the disc. Antennæ ♂ about two-thirds as long, ♀ about half as long as the body. Length 4.5-6.5 mm. California (Los Angeles)." [*P. juglandis* Leng,—Ent. Amer., VI, p. 214].
juglandis Leng

The two following generically doubtful species are appended to this group; the descriptions are as originally published.

- Blackish-piceous, finely, sparsely pubescent. Head and prothorax finely, not densely punctured, the latter a little wider than long, rounded at the sides, rufous, with a broad black dorsal stripe. Elytra not wider than the prothorax, densely punctured. Beneath sparsely punctulate, prothorax rufous, legs piceous, coxæ and thighs (except at base) blackish. Front coxæ contiguous; mesosternum triangular, middle coxæ slightly separated. Antennæ slender, filiform, a little more than half as long as the body, 4th joint equal to 5th. Length 6.3 mm. Lake Superior (Isle Royale). A single specimen. [*P. maculicollis* Lec,—Proc. Am. Phil. Soc., XVII, p. 614].....**maculicollis** Lec.
- Black, very sparsely and finely pubescent, head punctured; prothorax one-half wider than long, strongly punctured, much rounded at the sides; elytra strongly and equally punctured; antennæ and legs tinged with piceous, the former slender and about two-thirds as long as the body. Length 6.5 mm. New York (Buffalo). A single specimen. [*P. ater* Lec,—Bull. Bk. Ent. Soc., VII, 1884, p. 100].....**ater** Lec.

Group III.

Subgenus **Phymatodina** nov.

Greatly resembles the *varius—decussatus* section of the preceding subgenus, but notably different in sculpture and in the very short hind tarsi; there are a number of species and subspecies as follows:

- Elytra dark, but always pale between the anterior fascia and the base. .2
Elytra uniformly piceous-black throughout so far as known, excepting the white fasciæ.....4
2—Legs not differing much in the two sexes. Rather narrow and feebly convex, strongly shining throughout, the punctures throughout bearing rather long fine erect hairs; head blackish; prothorax pale testaceous, infumate anteriorly; elytra pale testaceous, blackish behind the anterior fascia; under surface blackish, the abdomen still darker, the legs and antennæ pale; head small, sparsely punctate, the eyes far from divided; antennæ four-fifths as long as the body (♂) or less than three-fourths (♀), slender, evidently thicker in the male, bristling with long sparse hairs, the second joint nearly half as long as the third; prothorax as long as wide, distinctly narrower than the elytra, strongly and evenly rounded at the sides, convex, with mod-

erate though deep and well separated, unevenly distributed punctures, which are simple and impressed and not at all granose as in the preceding section; scutellum small, nude, shining; elytra but little more than twice as long as wide, very obtuse at apex, broadly and feebly swollen behind the middle, the punctures small but not minute, impressed, everywhere widely separated; anterior fascia subtransverse, widely interrupted at the suture, the posterior strongly bioblique and very narrowly interrupted, the fasciæ not flat as in the preceding section but convex, more sharply defined and narrower; prosternum coarsely, irregularly and closely punctured (♂), or very finely and sparsely (♀); legs rather short and with only moderately clavate thighs in either sex. Length (♂, ♀) 5.0–6.2 mm.; width 1.3–1.6 mm. California (Sta. Cruz Mts., and adjacent regions). [*P. nitidus* Lec.,—Trans. Am. Ent. Soc., V, p. 66,—Sacramento].

nitidus Lec.

Legs much longer in the male, the femora more strongly inflated than in the male of *nitidus* and with the three pairs subequal, not rapidly diminishing postero-anteriorly as in the *varius* group.....3

3—Prothorax large, scarcely visibly narrower than the elytra; color, long bristling vestiture and sculpture as in *nitidus*; antennæ very pale, a little longer, with the second joint distinctly more than half as long as the third; prothorax not quite as long as wide, very strongly, evenly rounded at the sides, the smooth subconvex areas at the sides of the middle and on the median line basally nearly similar; scutellum very small, finely, loosely punctulate and with rather numerous small inclined hairs; elytra nearly similar though differing markedly in outline, scarcely swollen behind the middle and not at all wider there than at base, but differing especially in being arcuately narrowed in apical third to the much less obtuse apex; prosternum (♂) with the coarse punctures very much sparser than in *nitidus*. Length 6.6 mm.; width 1.8 mm. (♂). California (Sta. Cruz Mts.),—Harford.....*crucialis* n. sp.

Prothorax much narrower than the elytra, fully as long as wide and of different form, being subparallel and nearly straight at the sides, strongly rounding anteriorly to the apex and gradually arcuate and converging in about posterior two-fifths to the base, which is narrower than the apex and not subequal as in the two preceding; sculpture, coloration and long sparse bristling pubescence as in the preceding, the form of body narrower and more elongate; elytra more elongate, much more than twice as long as wide, parallel and subsinuate at the sides in basal three-fifths, the sides then rather abruptly but feebly converging and straight to the obtusely rounded apex, the fasciæ similar but rather wider and of a purer white; legs well developed and nearly similar but paler ferruginous; punctures of the prosternum (♂) coarse and slightly separated, very irregular in form; antennæ very pale, distinctly more slender than in *crucialis*, nearly as in *nitidus*. Length (♂) 6.3 mm.; width 1.75 mm. California (locality unknown).....*elegans* n. sp.

4—Very slender, parallel, rather depressed, deep black, the elytra, prosternum and legs blackish-piceous; antennæ very slender as usual,

pale testaceous; punctures of the head and pronotum much finer and more remotely scattered than in any of the preceding, the prothorax a little longer than wide, parallel, evenly and rather strongly rounded at the sides, subconstricted at the base as usual, convex, distinctly narrower than the elytra; scutellum relatively not so small though nearly nude; elytra more than twice as long as wide, not parallel as in the preceding forms but gradually narrowed from base to the rather narrowly rounded apices, not at all swollen behind the middle, the punctures smaller, very minute and even more remotely scattered, the fasciæ nearly similar, the posterior shorter, being more widely interrupted at the suture; legs nearly as in *nitidus*, rather short and relatively small, though the femora are strongly clavate; punctures of the prosternum (♂) coarser and more conspicuous than in *nitidus*, close, almost crowded. Length (♂) 4.6 mm.; width 1.25 mm. California (locality unrecorded).

exilis n. sp.

Group IV.

Subgenus *Microcallidium* nov.

The typical forms are allied to the preceding in the very short tarsi, but differ conspicuously in general habitus, as well as in the completely divided eyes; the species more closely resemble minute members of the restricted genus *Callidium* than any usual form of *Phymatodes*. With the typical species, *amænum* Say, are associated for the present two narrower and more convex species, which differ greatly in their undivided eyes. The species known to me may be easily known as follows:

- Elytra evenly and strongly, not densely punctate; form broader and more depressed. 2
 Elytra less coarsely and more closely punctate; form narrow and subcylindric, eyes not divided. 3
 2—Oblong, feebly convex, strongly shining, pale testaceous throughout above and beneath, except the elytra, which are of a uniform dark steel-blue and the antennæ and tibiæ, which are black, the former picescent distally, the tarsi piceous; vestiture sparse, erect, rather short; head small, strongly and rather loosely punctate; antennæ very slender, as long as the body (♂) or shorter (♀), the second joint fully half as long as the third, slender; prothorax small, very much narrower than the elytra, subprominently swollen at the sides and widest well behind the middle, the punctures distinct, sparsely and irregularly scattered, the surface broadly impressed along each side of the median line basally and also very feebly, transversely impressed apically; base a little narrower than the apex; scutellum well developed, nude, pale in color; elytra barely twice as long as wide, parallel, rapidly and very obtusely rounded at tip, the punctures comparatively coarse, impressed; legs rather short, subsimilar

in the sexes, the femora only moderately swollen; prosternum transversely, rather finely, not densely and confluent punctate (♀), more closely rugose (♂). Length (♂, ♀) 4.8–6.3 mm.; width 1.6–2.0 mm. Missouri and Indiana to Pennsylvania. [*Callidium amenum* Say,—Journ. Ac. Phila., III, 1823, p. 413; *Eriphus coccineicollis* Hald.,—Tr. Am. Phil. Soc., X, 1847, p. 39] ... **amenus** Say

A—Similar to the preceding in form, coloration and sculpture but very much larger, the antennæ with more elongate joints though similarly as long as the body (♂), and with a notably stouter basal joint; prothorax more broadly rounded at the sides and less prominent behind the middle, where however it is likewise widest; legs differing greatly, long, with large and very stout femora (♂), or notably small, with very moderate femora (♀); prosternum finely, closely rugose in the former, or finely, remotely punctate (♀). Length (♂, ♀) 7.0–7.8 mm.; width 2.4–2.6 mm. New York..... **hudsonicus** n. subsp.

3—Legs wholly testaceous. Form elongate, rufo-testaceous, with short sparse pallid pubescence; prothorax slightly shorter than wide, anteriorly somewhat, posteriorly distinctly, constricted, the sides rounded, sparsely punctate; elytra dark blue, densely punctate; abdomen nigrescent; antennæ obscure rufous at base. Length 6.3 mm. California (Tejon). [*Callidium blandum* Lec.,—Proc. Acad. Phila., 1859, p. 79]..... **blandus** Lec.

Legs deep black, the tibiæ and tarsi feebly picescent. Form narrow, convex, strongly shining, deep black throughout, the prothorax above and beneath alone paler and testaceous, the pronotum nubilously bordered with black at apex and base toward the middle; pubescence everywhere extremely short, inconspicuous; head finely but strongly, not densely punctate, the eyes very far from divided, the notch only penetrating two-thirds across; antennæ (♂) moderately slender, four-fifths as long as the body, blackish, the joints feebly pallescent toward their bases, the second a little more than half as long as the third; prothorax only very little narrower than the elytra, parallel, with very evenly and strongly arcuate sides, nearly as long as wide, the base and apex subequal, the former scarcely at all constricted; surface very convex, finely, not densely punctate, with an elongate and smooth, scarcely convex space at each side of the median line, which is narrowly impunctate basally but not tumid; scutellum small, nude, polished; elytra much more than twice as long as wide, parallel, rather obtusely rounded at apex, the punctures not very coarse, impressed, separated by about their own diameters; legs rather short, with moderately but very abruptly clavate femora, not differing much sexually; tarsi very short. Length (♂, ♀) 5.3–5.8 mm.; width 1.3–1.6 mm. New Mexico..... **densipennis** n. sp.

Æreus Newm., is now erroneously listed as a *Callidium* but was correctly assigned to *Phymatodes* by LeConte in his early studies; it does not seem to merit its name very obviously, as there is no distinct metallic lustre, at any rate in my single male example,

which was taken near Peekskill. *Obscurus* Lec., is represented in my collection by a single apparently authentic male, 10.0 by 3.0 mm. in size, taken at an unrecorded locality in California; it agrees well with the original description quoted above, except that the small basal smooth spots of the pronotum, though very evident, are not at all convex or callus-like, and that it is somewhat shining; *grandis* is probably sometimes confounded with *obscurus*, but is quite different in its more parallel elytra, less prominent humeri, uniform punctuation and absence of basal thoracic smooth spots, as well as in its materially larger size.

Variabilis is normally pale testaceous in color, with the entire elytra deep steel-blue; forms wholly pale occur however, as in *Hylotrupes bajulus* and *Gonocallus collaris*, but I have never noticed any definite inconstancy of that kind in the other species of *Phymatodes*, although the basal region of the elytra seems to vary from black to testaceous in a number of species; *diffidens*, of the above table, differs from the normally black *varius*, however, in some structural characters; for example, the isthmus connecting the upper and lower parts of the eyes in *varius* has the facets of its single line large, widely spaced and transversely oval, while in *diffidens* they become very close-set though still in single line.

Luridus Rossi,—in our lists under the name *thoracicus*—is an importation that seems to be still but rarely met with and may not be thoroughly established thus far; it is piceous in color, the prothorax rufous, with brownish spots laterally and the male antennæ are very slender and unusually long.

The remarks made under my original description of *obliquus* resulted from a confusion of specific forms. The male type of *obliquus* is labeled simply "Cal." From Sta. Clara Co., there are three examples, one a male with bicolored elytra, formerly placed with *decussatus* and two large females with entirely black elytra, previously regarded as females of the male *obliquus* type, but erroneously as is now evident; these three are the above described cotypes of *harfordi*.

It is almost a certainty that *semicircularis* Bland (Proc. Ent. Soc. Phila., 1862, p. 9), if not founded upon an extraordinary aberration or sport, which seems unlikely, is a species not only distinct but of a different genus. The type if still in existence should be studied more attentively.

Merium Kirby.

In addition to the type species of this genus there is at least one other, the differences which apparently are not due to sex being expressible as follows:

Elongate, black, the sterna of the hind body and the abdomen blackish-piceous; head black; elytra dark but suffusedly and irregularly pale before the middle internally and each with two acutely elevated pale vittæ, the fine marginal gutter also pale, the dark parts suffused with marked violaceous lustre; legs piceous-black, the femora testaceous, suffusedly dark basally and at apex, the vestiture consisting of very small sparse hairs; head strongly and confluent punctate; eyes finely faceted, two-thirds divided; antennæ (♀) scarcely two-thirds as long as the body, slender, the basal parts with a few long hairs and with the decumbent cinereous hairs rather dense, the second joint fully half as long as the third; prothorax one-half wider than long, the side parallel and broadly arcuate, becoming gradually strongly converging and arcuate to the basal constriction, the broadly and briefly tubulate base but little more than two-thirds as wide as the broadly arcuate and unreflexed apex; surface smooth, polished and unimpressed, with a few widely scattered coarse punctures, abruptly coarsely and very densely punctured laterally; elytra more than twice as long as wide, at base fully two-fifths wider than the prothorax, slightly narrowed from base to the rounded apices, the surface feebly rugose, coarsely, rather loosely punctured, the punctures becoming rather fine, asperulate and evidently separated apically over the rugulose surface, the vittæ becoming disintegrated posteriorly, disappearing at about apical fourth or fifth; legs rather long, the femora moderately swollen. Length (♀) 15.5 mm.; width 4.4 mm. British America and Lake Superior region; New York—LeConte. [*Callidium proteus* Kirby,—Fn. Bor.-Am., IV, 1837, p. 172].....**proteus** Kirby

Elongate but broader, black throughout, the abdomen picescent; legs nearly as in the preceding, the elytra wholly black, scarcely visibly picescent posteriorly, the dark parts wholly without violaceous lustre but with very faint greenish glint, the prothorax without trace of metallic reflection; head with strong but widely separated punctures, dense only laterally; antennæ (♀) nearly similar, except that the fine vestiture basally is sparser and less evident, the second joint being less than half as long as the third and that they are still shorter, only a little more than half as long as the body and gradually stouter toward base; prothorax differing notably, larger and more transverse, more than three-fourths wider than long, similar in general form but with the parallel sides anteriorly more arcuate, the still more briefly subtubulate base much wider, nearly four-fifths as wide as the apex, the latter broadly arcuate, acutely sub-reflexed medially; surface with median half smooth, polished and with a few very coarse punctures, which tend to define a broad smooth median line, the posterior part of the smooth surface with

two large subtransverse concavities, the dense lateral punctures coarser; elytra less evidently more than twice as long as wide, at base not over a third wider than the prothorax, with rather small and widely scattered punctures basally, becoming gradually very coarse, dense and rugulose confluent apically, where they are not at all isolated or asperate, the pale lines very obtuse and represented only by some detached pallid spots ending slightly behind the middle. Length (♀) 16.0 mm.; width 5.0 mm. Wisconsin (Bayfield),—Wickham.....**bifossatum** n. sp.

The differences between these two species can be inferred very readily by a comparison of the descriptions, which are made unusually full for this purpose; the sculpture of the elytra toward tip is quite different in character in *bifossatum*.

Callidium Fabr.

As restricted by LeConte and apparently also by recent European authorities, this group of species is very homogeneous, having a rather broad, oblong and feebly convex body, with more transverse and laterally rounded prothorax than in any *Phymatodes*. It is probable that the genus originated on the North American continent and spread from the Atlantic regions to Europe; I infer this, at least, on discovering that our west coast form, hitherto mingled with the eastern representatives of *antennatum*, is subspecifically different. Our species excepting a few not at present before me, may be separated as follows:

Antennæ very much longer in the male than in the female, somewhat incrassate basally and with the basal joint notably thick; prothorax with the lateral part very finely, densely and rugulose punctate and opaque, especially in the male, the median part less opaque or alutaceous, feebly and loosely punctate and separated from the opaque area by a clear and abrupt line, which is sinuated just behind the middle.....2

Antennæ apparently differing but little sexually; sculpture diversified...3

2—Oblong, very dull in lustre and deep obscure blue throughout above, parallel; antennæ (♂) fully as long as the body; prothorax in that sex fully as wide as the elytra to a little wider; elytra feebly and arcuately narrowed apically to the broadly rounded apices, very densely but shallowly punctate and each with two fine but very distinctly defined raised lines, the punctures apically becoming rather confused and not well defined; prosternum (♂), opaque, very finely and densely, subconfluent punctate. Length 12.5–14.0 mm.; width 4.4–4.8 mm. Atlantic regions. [*C. antennatum* Newm.,—Ent. Mag., V, 1838, p. 393].....**antennatum** Newm.

A—similar but not quite so broad, very similar in general size, form and facies, but with the antennæ (♂) not so long, being a little

shorter than the body, or (♀) but slightly more than half as long as the body; prothorax (♂) not quite so transverse and always somewhat narrower than the elytra, sculptured as in *antennatum* throughout, except that the densely punctured lateral areas are less opaque, the punctures being less minute; scutellum more shining and less obtuse; elytra differing radically in being more coarsely and deeply punctured, much more shining, with the punctures very distinctly defined and coarser apically, the fine raised lines obsolescent; prosternal sculpture (♂) similar but rather less minute, or (♀) smooth, shining and very finely, feebly and remotely sculptured. Length 12.0–14.0 mm.; width 4.0–4.8 mm. California, Nevada and Idaho. *hesperum* n. subsp.

- 3—Size larger, oblong, somewhat shining, obscure deep blue, the elytra feebly violaceous, the antennæ slender; prothorax (♂) finely, very densely punctate and subopaque laterally and anteriorly, the median parts basally coarsely, deeply and closely so but shining, with a more shining and less closely sculptured spot at each side of the middle, or (♀) fully as large, similarly rounded at the sides but even more constricted and very broadly subtubulate at base, shining but with very coarse, dense and subconfluent punctures throughout, except a small smooth shining spot at the middle of the length near lateral fourth; elytra scarcely twice as long as wide, parallel, with perfectly straight sides to the very broadly rounded apices, much wider than the prothorax in both sexes, very coarsely, strongly and closely punctured throughout but shining, each puncture with a small hair growing from an acute granule at its anterior margin; prosternum (♂) finely, closely but deeply, rugulose punctate and dull, or (♀) strongly shining and coarsely, deeply, very confluent and transversely punctato-rugose. Length 9.0–13.3 mm.; width 3.2–5.0 mm. New York (Lake George). [*C. janthinum* Lec.,—Journ. Acad. Phila., ser. 2, II, p. 34]. *janthinum* Lec.

Size smaller, more convex, shining almost throughout. 4

- 4—Form elongate, very dark greenish-blue and strongly shining above, except at the sides of the prothorax, where the sculpture becomes abruptly very coarsely and opaquely punctato-rugose, the rugose area separated from the simply coarsely and deeply and rather closely punctate median part by a line that curves gently from the anterior margin near the sides to the sides before the base, without trace of sinus; under surface, legs and antennæ shining and deep black; pubescence erect, black and bristling from the head and prothorax laterally, almost wanting and extremely short on the elytra; head densely punctate, small, the antennæ (♂) about two-thirds as long as the body, rather thickened basally but with the basal joint not abnormally thickened; prothorax two-thirds wider than long, parallel, quite evenly and strongly rounded at the sides throughout, not at all constricted or subtubulate at base; scutellum small, nude, very obtusely and broadly ogival; elytra scarcely twice as long as wide, very feebly narrowed from base to the obtuse apices, at base distinctly wider than the prothorax, very coarsely, deeply and densely punctate throughout, the punctures irregularly and

polygonally crowded, a little smaller and separated toward base, the fine raised lines scarcely traceable; legs moderate, the femora strongly swollen; prosternum (♂) alutaceous, very coarsely and deeply, rather irregularly punctate and with a transversely and obtusely angulate smooth area before the coxæ, the punctures everywhere distinctly separated and well defined. Length (♂) 19.0 mm.; width 3.2 mm. California (locality unrecorded).

californicum n. sp.

Form nearly as elongate but less convex, shining, deep and obscure bluish-green throughout above, the legs, antennæ and under surface blackish-piceous and without metallic lustre, except a bluish reflection on the prosternum; vestiture nearly as in the preceding; head densely and strongly punctate; antennæ (♀) half as long as the body, the tenth joint less than one-half longer than wide, the last abruptly narrowed at apex; prothorax two-thirds wider than long, widest behind the middle, the sides strongly, evenly rounded, converging and feebly so thence to the apex, more rapidly converging and rounded to the very faintly subtubulate base, very coarsely, deeply, closely punctate, the punctures becoming much smaller, dense and rugulose but still shining at the sides; scutellum small, deeply grooved; elytra scarcely twice as long as wide, parallel, a third wider than the prothorax, very obtusely rounded at the apices, the punctures very coarse but shallow, densely crowded posteriorly, smaller and separated basally, the surface somewhat alutaceous, each puncture with a small polished green spot at its bottom; prosternum finely, sparsely punctulate and shining. Length (♀) 9.3 mm.; width 3.2 mm. Canada.....**frigidum** n. sp.

Form shorter, more oblong and still less convex, shining and metallic bluish anteriorly, obscure greenish on the elytra; antennæ blackish-piceous, the basal joint black, the legs piceous-black, the entire under surface pale piceo-testaceous, without metallic lustre at any part; head densely and strongly, rugosely punctate; antennæ (♀) rather more than half as long as the body, somewhat stout, the second joint more than half as long as the third, tenth nearly twice as long as wide, the last rapidly pointed but not constricted at apex; prothorax less transverse, barely one-half wider than long, widest at basal two-fifths, where the sides are subangulately prominent, thence rather feebly converging and feebly but evenly arcuate to the apex, very rapidly converging and nearly straight to the basal margin; punctures coarse, deep and close-set, becoming rather gradually less coarse, denser and more rugose though only a little less shining at the sides; scutellum small, concave apically; elytra evidently less than twice as long as wide, perfectly parallel throughout, rapidly and broadly rounded at apex, about a fourth wider than the prothorax, very coarsely, deeply and densely punctate, the punctures everywhere crowded and distorted, still coarse but only slightly separated though rounded basally; prosternum very finely, transversely rugulose, smooth at the middle. Length (♀) 9.0 mm.; width 3.3 mm. Wisconsin (Bayfield),—Wickham.

lacustre n. sp.

The locality of *janthinum* is erroneously given as "Texas" by Mr. Leng (Bull. Bk., VII, p. 113). It is northern, like all other species of the genus, and seems not to occur in the south; it is a very peculiar species, not only in sculpture but in sexual characters and is represented in my collections by two very dilapidated specimens kindly communicated by Prof. James F. Kemp;* it appears to be very rare; the elytra are singularly straight and parallel at the sides and the surface more flattened than in any other species. *Cicatricosum* Mann., is from Alaska and the Colorado examples so identified by Leng (l. c.) belong to a very different species. *Hirtellum* and *vile* of LeConte, are remarkable species either in coloration, size or sculpture, and may not be strictly congeneric. The greatest width given above for *antennatum* refers to the prothorax and, for *hesperum*, to the elytra. *Æreum* Newm., if I have correctly identified the species, is a true *Phymatodes* and not a *Callidium*.

Tribe CERAMBYCINI.

Some of the characters brought forward hitherto in an attempt to define genera among the allies of *Elaphidion*, in the LeContean group Cerambyci of this tribe, seem to be equivocal and of no real value. For example, the carination of the outer antennal joints, serving as the principal basis of the genus *Aneflus*, is quite as evident in *Hypermallus arizonensis* and is even very much more acute and distinct in *Elaphidion irroratum*; and the elongate patches of dense sensitive antennal pubescence advanced as one of the chief distinctive features of *Romaleum*, are quite as evident in *Aneflus*, *Hypermallus incertus* and some other species, not associable with *Romaleum* from any other viewpoint. Making use in some cases of rather more general characters, involving the habitus of the various species, and of some well defined structural modifications of the antennal spines and elytral apex, I would suggest the following scheme for the separation of the rather numerous genera:

- Spine of the third antennal joint very long and conspicuous.....2
 Spine of the third joint short, sometimes becoming obsolete though then
 represented by a sharply defined angle.....3

* Very recently Mr. Frost has generously sent me three very good specimens of this species taken at Monmouth, Me. In one of these examples, a large female, the color is pure blue with scarcely any violaceous reflection; in some other specimens the elytra are strongly violaceous.

2—Prothorax shorter than wide, rounded at the sides and with large callous spaces; upper surface irregularly pubescent; prosternum vertical behind; femora bispinose at apex; elytra strongly bispinose at tip. [Type *Cerambyx irroratus* Linn.]. **Elaphidion**

Prothorax elongate and cylindrical; upper surface subglabrous but having long erect flying hairs; prosternum not vertical, sloping gradually upward behind; body very slender, linear and moderately shining, punctate; elytra sinuato-truncate but not spinose at apex; antennæ somewhat flattened distally. [Type *Elaphidion tenue* Lec.].

Anepsyra

3—Prothorax elongate, nearly or quite cylindric; vestiture as a rule uniform, subdecumbent and more or less scanty; body more or less slender, the elytra very elongate, parallel or very nearly and rectilinear at the sides, very moderately spinulose at tip as a rule. 4

Prothorax never elongate, generally distinctly wider than long, with rounded or subangular sides; body frequently very stout, though sometimes notably slender, the elytra less parallel and with less rectilinear sides, the decumbent vestiture generally variegated with more condensed irregular patches. 6

4—Prothorax feebly biconstricted and very feebly and remotely punctate, shining as in many Ibidiones; body extremely slender, notably shining, the met-episterna very narrow and parallel; antennæ very slender and filiform, not carinate at any part, the outer joints not at all flattened, the spines very small, not visible beyond the fourth joint; elytra deeply sinuate and moderately bispinose at apex; legs and tarsi very slender, the femora not spinose. [Type *Stenocorus unicolor* Rand.]. **Pseudibidion**

Prothorax not biconstricted, always strongly and closely sculptured; femora not or very feebly bispinose at tip. 5

5—Body moderate in size, slightly less slender than in *Pseudibidion*; antennæ slender, with joints three to five or six carinulate, sometimes strongly but generally rather obsoletely, the outer joints but very slightly flattened, not or but slightly carinate; pubescence uniform and rather sparse as a rule; elytra narrowly sinuate and feebly bidentate at apex in typical forms. [Type *Elaphidion subpubescens* Lec.]. **Aneflomorpha**

Body much larger, the antennæ long and broader, strongly flattened, the outer joints distinctly carinate, the subbasal without trace of the Ibidion-like carina; sculpture of the upper surface coarser and more conspicuous in the typical forms, the elytral tips emarginate and moderately bispinose. [Type *Elaphidion protensum* Lec.]. **Aneflus**

6—Body large and notably stout, with great sexual differences in the form and sculpture of the prothorax; antennæ more or less flattened apically, with notably developed dense sensitive punctulation along the concave lower part of the joints; spines moderate; met-episterna broad, distinctly narrowed antero-posteriorly. [Type *Cerambyx atomarius* Drury]. **Romaleum**

Body smaller, moderate to small in size and always much less stout in form, sometimes very slender; sexual differences in the prothorax frequently distinct in sculpture but less marked than in *Romaleum*;

met-episterna narrower and parallel or very nearly; antennæ more or less flattened distally and often prominently convex along the inner face of the joints.....7
 7—Elytra spinose at tip. [Type *Cerambyx villosus* Fabr.]...**Hypermallus**
 Elytra narrowly truncate at tip, the sutural angle distinct and sometimes very minutely dentiform; hind body shorter and relatively broader in form. [Type *Elaphidion cinerascens* Lec.].....**Anoplium**

As may be inferred, the genus *Aneflus*, as formerly organized by LeConte, was complex and included the above defined genera *Anepsyra* and *Aneflomorpha* as well as *Aneflus* proper. The arrangement here proposed makes the transition from such forms as *Anoplium mæstum* Lec., to the genus *Tylonotus* very easy and natural but widely separates *Elaphidion* from *Hypermallus*; this however I believe to be correct as the remarkable prosternal characters and very long spine of the antennæ show that it is not closely related to *Hypermallus*, in spite of a certain general facies in common. It seems evident that nearly all the described species can be distributed among the above defined genera, though a few may demand still other generic or subgeneric assignment, such for example as *Elaphidion levettei* Csy., which is not a typical *Aneflus*, where it is placed by Schaeffer, and *E. lanatum* Chev., as identified by Horn (Ent. Amer., VI, p. 214) from Florida, the latter being only 4-5.5 mm. in length, which alone casts suspicion upon it as a member of this group. The true Cuban *lanatum* is a very different thing, if the above published measurements are correct, it being 15½ by 3½ mm. in dimensions.

The genus *Eustroma* Lec., probably belongs with the others included above in the *Elaphidion* section of the Cerambyci, but is here omitted for various reasons.

Elaphidion Serv.

The type of this genus, *irroratum* Linn., has the posterior limit of the prosternum transversely acute, the posterior wall vertical or even concave, but in *mucronatum* the posterior limit is not acute and the wall is barely vertical; these two species also differ very much in general elytral sculpture and vestiture but appear otherwise to be congeneric. *Mimeticum* Schf., and *mutatum* Gahan, may also be placed here, as well as *tectum* Lec., though in *tectum* there seems to be a notable diminution of the antennal spines when com-

pared with *mucronatum*, and I have seen no reference to its prosternal structure.

Anepsyra n. gen.

A distinct genus seems to be necessary for *Elaphidion tenue* and *Aneflus volitans* of LeConte, for which the above name is suggested. The very conspicuous spine of the third antennal joint, which is two-thirds as long as the fourth joint in both species, together with the elongate prothorax and the vestiture of erect flying hairs, indicates that the genus may be suggestive in some measure of the tropical *Psyrassa*. Both species seem to be rare, inhabiting respectively southern Texas and Lower California.

Pseudibidion n. gen.

This name is suggested for a genus to receive the species described by Randall under the name *Stenocorus unicolor* and subsequently having several other resting places in the taxonomic scheme, until finally included as an aberrant *Elaphidion* in our recent lists. It is of an isolated facies among our species, and the characters given in the table set forth its more salient peculiarities.

Aneflomorpha n. gen.

This genus is a moderately large one. Besides *subpubescens* Lec., it will comprise, among the described species, *lengi* Schf., which has the peculiar Ibidion-like carina of antennal joints 3-6 well developed as in *unispinosa*, described below, *Elaphidion lineare* of LeConte, from California, the Mexican *Aneflus cylindricollis* of Bates and possibly *Aneflus calvatus* Horn. *Elaphidion aculeatum* also seems to be best assigned to *Aneflomorpha*, although the antennal and elytral spines appear to be more developed than is the rule in this genus, and there would seem to be a greater development of the so-called flying hairs on the upper surface, these being absent or scarcely visible in the normal species, such as *subpubescens* and those described below. *Levettei* Csy., can likewise be appended to this genus as a very aberrant member, having the same outline and general structure but differing very strikingly from normal forms in sculpture and vestiture, the small decumbent cinereous hairs of the elytra being aggregated into about four dense vittæ on each

elytron; there are also a few moderately long erect stiff tactile hairs arising from coarser punctures, arranged linearly among the smaller and closer punctures, a series along the sutural margin being especially conspicuous; according, however, to Mr. Schaeffer, the antennæ would seem to be much more flattened and distally carinate than in any other, making a closer approach to *Aneflus* in this respect. The two species first described below are consistent allies of *subpubescens* and the third is also very similar in every way, except in the structure of the elytral apices and in the stronger subbasal antennal carina.

Aneflomorpha seminuda n. sp.—Form as in *subpubescens* but smaller and relatively still narrower, pale brownish-testaceous throughout; head and prothorax very densely, subrugosely punctate and with moderate even subdecumbent hairs, the latter cylindric, about a sixth longer than wide, the sides very feebly prominent at the middle and slightly rounding at apex, the surface very evenly, coarsely and confluent punctate throughout, the walls of the punctures entire at their posterior but generally open at their anterior margins; antennæ (♂) about as long as the body, slender, the spines very small, wanting after the fifth joint, the third two-fifths longer than the fourth; scutellum rounded, very densely and pallidly pubescent; elytra perfectly parallel, with straight sides, more than three times as long as the prothorax and not quite two-fifths wider, the punctures rather coarse, deep, separated by scarcely more than their diameters basally, becoming gradually very fine and relatively less close at the apices, the latter narrowly and rather deeply sinuate, the sinuses limited at each side by equal and acutely dentiform angles, which are not at all spiniform; femora slender, scarcely at all spinose at apex; fifth ventral (♂) with the rectilinearly truncate apex only half as wide as the base. Length (♂) 13.8 mm.; width 2.6 mm. Texas.

To be known easily by the slender parallel form and short, decumbent, well separated hairs and virtual absence of erect hairs; the antennal spines are smaller, the pronotal punctures coarser and more confluent and the abdomen laterally much less densely punctulate and pubescent than in *subpubescens*, the abdomen being very uniformly, finely, sparsely punctate and pubescent throughout.

Aneflomorpha longipennis n. sp.—Form and coloration nearly as in the preceding but with relatively longer elytra and shorter anterior parts, also slightly greater convexity; head and prothorax very densely, confluent punctate throughout, the latter only very slightly longer than wide, parallel, the sides becoming feebly arcuate medially, the pallid hairs rather coarse, subdecumbent and well separated, very even throughout; antennæ (♂) not quite as long as the body, very slender, the outer joints filiform, not compressed and unmodified, the spines of joints

three to five better developed, rapidly diminishing, that of the third joint nearly two-fifths as long as the fourth joint, third joint nearly one-half longer than the fourth; scutellum rounded behind, moderately densely clothed with very short pallid hairs; elytra rather more than four times as long as the prothorax and more than one-half wider, perfectly parallel, the punctures rather small and well separated even basally, the apices as in the preceding, the fifth ventral more broadly and arcuately truncate; legs very slender, the femora not spinose; abdomen uniformly and somewhat strongly punctate and feebly pubescent throughout. Length (♂) 14.0 mm.; width 2.9 mm. California (Siskiyou Co.),—Kœbele.

The elytral pubescence is decumbent, sparse, even and unmixed with erect hairs of any kind. It is much larger than *linearis* Lec., to which it may be allied, differing besides in the almost complete extinction of anything that could be called a posterior thoracic callus, there being simply the remains of a very narrow impunctate median line just behind the centre; the elytral punctures also seem to be smaller; *linearis* is from the southern part of the state.

**Aneffomorpha unispinosa* n. sp.—Similar in its very elongate and narrow, parallel form but less testaceous and more piceous in color throughout, the vestiture of whitish hairs decumbent, scanty and unmingled with erect hairs; head wider than the apex of the prothorax, very densely punctate, the eyes separated by only three-fifths their width; antennæ (♂) very slender and filiform, evidently longer than the body, the spines small, the dorsal carina very strong and clearly defined on the subbasal joints, the fourth joint much longer than the first; prothorax elongate, fully a fourth longer than wide, cylindric, very feebly and obtusely subprominent at the sides well behind the middle, the punctures very coarse, densely confluent throughout, with a very small elongate impunctate median line behind the centre; scutellum rounded, densely and pallidly pubescent; elytra about four times as long as the prothorax and two-thirds wider, rectilinear, the apices each with a very small feeble sinus, which is limited by a long spiniform sutural projection and a very broadly obtuse lateral angle; punctures basally very moderate but deep, separated by two to nearly three times their diameters and with not more than half the diameter of the thoracic punctures, becoming fine and rather sparser apically nearly as in *longipennis* but not so noticeably so as in *subpubescens* and especially in *seminuda*; legs slender, the femora mutic, the fifth ventral (♂) sinuato-truncate. Length (♂) 16.5 mm.; width 3.2 mm. Mexico (Colonia García, Chihuahua),—Townsend.

Differs from the two preceding and *subpubescens* in its rufo-piceous color, more slender and relatively even more coarsely punctured prothorax, longer antennæ, in the elytral apices and the fine strong dorsal carina of the antennal joints almost throughout but becoming much stronger on the subbasal joints.

Aneflus Lec.

The antennæ in this genus become much more flattened distally than in the preceding three genera, with a convex ridge along the median line of the outer joints, but without trace of the dorsal carina of the subbasal joints observable in *Aneflomorpha*. The size of the body is also very much greater. Besides the type described as *Elaphidion protensum* by LeConte, the genus will probably include *Elaphidion fuchsi* Wick. (Can. Ent., 1905, p. 170), as well as *Aneflus prolixus* Lec. (Sm. Misc. Coll., 264, 1873, p. 203). The following species seems to be allied to *prolixus*:

Aneflus cochisensis n. sp.—Very elongate, moderately slender, very dark piceous-brown throughout, covered uniformly with rather coarse and decumbent, close-set whitish hairs, without erect hairs, except toward the sides, more notably of the head and prothorax; head densely rugose, with a fine abrupt striiform canaliculation; antennæ (♂) extending to apical fourth or fifth of the elytra, rather stout, compressed, densely, finely pubescent, with short decumbent pale hairs, the second joint anchylosed with the third, as long as wide, third much longer than the fourth but only just visibly longer than the fifth, swollen at tip and with a short and very stiff diverging spine, the carina of the distal joints very obtuse, convex, the apical process of the last joint abruptly narrowed, parallel; prothorax cylindric, very slightly elongate, parallel and but slightly uneven at the sides, very coarsely, densely and confluent punctate, with a small irregular callus on the middle line at outer fifth, a small and more anterior, less lateral tubercle and a minute callus in the same line near the base, also with a narrow, very irregular callous median line for a short distance behind the centre; scutellum finely, closely pubescent, with a polished nude median line; elytra not quite four times as long as the prothorax and almost one-half wider, three times as long as wide, parallel and very straight at the sides to the conjointly semicircular apex, each with a small shallow apical sinus, the sutural spine short but slender, the outer obtusely dentiform; surface irregularly but rather loosely punctured, very coarsely so basally, finely and obscurely distally, each having two broad feeble raised discal lines; legs moderate; femora not spinose; fifth ventral (♂) much shorter than the fourth, broadly sinuate at tip, the lateral angles well defined; palpi stout, the last joint of the maxillary nearly as long as the two preceding, twice as long as wide, obliquely arcuate at tip. Length (♂) 26.0 mm.; width 5.8 mm. Arizona (Douglas, Cochise Co.),—F. H. Snow.

A single male sent to me under the name *Aneflus protensus* Lec. It differs from *protensus*, which is a native of Sonora, Mexico, in its cylindric, parallel and not anteriorly and posteriorly narrowed prothorax, which is said to be subangularly rounded at the sides in that species, in the absence of transverse pronotal plications, in the

short and inconspicuous apical spines of the elytra, the scarcely at all spinose femora and apparently rather more plentiful or coarser pubescence.

Romaleum White.

The moderately numerous species of *Romaleum* are well distinguished from any other of the *Elaphidion* section of the Cerambyci, by their large size, very stout and more or less convex form, great sexual differences in the prothorax and broader and more posteriorly narrowed met-episterna. The genus is a distinctly valid one. Besides *simplicicollæ* Hald., and *procerum* Lec., the latter being plainly distinct from the former and not a variety,—much less a synonym as pronounced by Dr. Horn—the genus will include *atomarium* Drury, *rufulum* Hald., *seminitidum* Horn and *tæniatum* Lec.; the species *niveitectum*, of Schaeffer, may also be included for the present, although it differs considerably in thoracic characters. The three following species are allied to *atomarium* and *rufulum*:

Romaleum thoracicum n. sp.—Stout, convex, very dark brown to blackish throughout. Female with the antennæ slender, flattened beyond the fourth joint, extending to about apical fourth of the elytra, strongly punctured and coarsely, pallidly pubescent basally, becoming more finely so on the sixth and thence very finely and densely to the tip, with the more densely pubescent areas conspicuous, the spines small, gradually decreasing, the joints beyond the fourth bispinose at apex, fourth two-thirds as long as the third and less than four-fifths as long as the fifth; prothorax subglobular, about a fourth wider than long, evenly and strongly rounded on the sides throughout, the apex distinctly narrower than the base; surface coarsely, not very deeply, confluent and confusedly punctured, having only moderately close, even, short decumbent hairs and very numerous longer erect hairs, having also a tumid callus two-fifths from the apex at outer fourth and an elongate-oval, smooth and feebly convex area on the median line behind the centre; elytra two and a third times longer than wide, a fourth wider than the prothorax, tapering rather strongly from base to apex, the apices broadly sinuate between the rather long and slender, equal spines; surface even, the short yellowish vestiture closely decumbent and aggregated into irregularly condensed areas, also with numerous short stiff suberect hairs throughout, not so long as those of the prothorax, the punctures strong, only moderately large, deep, perforate, separated by two to four times their diameters basally, sensibly smaller but distinct distally; femora wholly unarmed. Male similar but larger, the antennæ two-thirds longer than the body, gradually notably stout basally, densely sculptured, the fourth and fifth joints equal; prothorax narrower and less transverse than in *atomarium*, distinctly narrower than the base of the elytra, with nearly similar fine dense sculpture and callous spots, but less densely, more finely and more

evenly pubescent; elytra nearly as in the female. Length (σ , φ) 23.0–26.5 mm.; width 6.7–7.8 mm. Texas.

In the female of *atomarium* the prothorax is more transverse, with apex and base equal and the parallel sides broadly angulate medially, thence straight and converging to base and apex, the coarse punctures deeper and less confluent, the pubescence more irregularly condensed and the bristling erect hairs less numerous; the antennæ are longer, rather stouter and with the fourth and fifth joints equal and, finally, the elytra are more elongate and more coarsely punctate, the elongation much more evident in the male than in the female. My examples of *atomarium* come from Missouri, but seem to be similar in every way to those from the type locality in New York.

Romaleum mancum n. sp.—Male similar to the male of *rufulum* in general form, pallid coloration and sculpture but a little narrower and distinctly more parallel, the antennæ notably stouter very gradually toward base than in that species, similar in length and vestiture; prothorax smaller and much less transverse, much narrower than the base of the elytra, about a fourth wider than long, similar otherwise; elytra similar but less narrowed from base to apex, the small decumbent dense hairs finer, shorter and still more uniform, the apices wholly different, not having the two long spines of *rufulum* but more narrowly and feebly sinuato-truncate, the sutural spine long and slender as in that species, the outer limit of the sinus indicated only by a very broad obtuse angle. Length (σ) 25.0 mm.; width 6.8 mm. Rhode Island.

Differs from *rufulum* principally in the characters above described; the difference in form of the elytral apices is very remarkable and there is no evidence of mutilation of any kind, even under moderate powers of the microscope, the very obtuse outer angle being identical on both elytra and very clearly outlined; this, together with the stouter antennæ, smaller and less transverse prothorax and finer vestiture, apparently indicates specific difference.

Romaleum crinicornis n. sp.—Female a little larger, stouter and more convex than the female of *rufulum*, similar in coloration, sculpture and in the antennæ; prothorax differing greatly, nearly one-half wider than long, widest at about the middle, the sides broadly and subevenly rounded throughout, except rapidly a little more so at apex and subsinuate before the base, which is broadly subtubulate, evidently wider than the apex; surface coarsely, deeply and densely punctate, the callous areas nearly as in *rufulum*; scutellum larger and more transverse; elytra similar in general form and not quite a fourth wider than the prothorax, the dense decumbent hairs smaller and broadly, feebly mottled in density, the erect hairs short and sparse but more distinctly visible than in *rufulum*, the

apices somewhat different, similarly sinuate and with similar sutural spine, the outer limit however not spiniform but rather prominently and acutely dentate, the tooth broad basally and not quite as long as the sutural spine; under surface much less densely pubescent, the fifth ventral narrower and longer. Length (♀) 26.5 mm.; width 7.8 mm. Texas.

The form of the prothorax in the female of *rufulum* is rather obtrapezoidal, with broadly and feebly arcuate sides, the greatest width being anteriorly and the apex much wider than the base; the surface also is less convex than in *crinicornis* and the vestiture, as well as that of the remainder of the body and especially of the under surface, less dense; these divergencies, together with the larger and stouter body and form of the elytral apices, will readily serve to distinguish the two species. The antennæ are similarly pubescent, the fringe along the under side of the joints conspicuous.

Hypermallus Lac.

The rather numerous species of this genus have never been adequately studied; they have a rather monotonous appearance, which may be the source of much of this neglect. I would propose the following arrangement of the material now in my collection:

Form stouter, sometimes of rather large size, the pronotum with large callous spaces.....2

Form narrower, sometimes linear, the pronotum not having smooth areas except on the median line behind the centre.....4

2—Body large; callous areas of the pronotum three in number, the usual two anterior obsolete, the sculpture rather strong and irregularly confluent; sublateral smooth areas elongate, linear and irregular from before the middle to the base, the median spot behind the centre elongate-fusiform, flat; surface with a few small scattered condensed yellowish spots; elytra two-fifths wider than the prothorax and not quite four times as long, feebly tapering throughout, the apices truncate, with a small but distinct sutural spine and broad and rather acutely prominent lateral tooth; punctures very coarse toward base; pubescence sparsely variegated. Length 20.5–23.5 mm.; width 5.6–5.9 mm. Arizona.....arizonensis Csy.

Body moderate to small in size, the polished callous areas of the pronotum five in number.....3

3—Moderately large, rather stout, dark red-brown, with sparse and rather fine condensed spots on the elytra; prothorax about a third wider than long, the entire median line broadly smooth and feebly swollen, narrow anteriorly, the basal of the sublateral smooth tumidities elongate, the anterior and less lateral smaller and rounded; punctures (♀) coarse and close but not confluent, notably varying in size, the hairs coarse, sparse and subuniform; elytra subparallel,

narrowing only apically, the apices rather broadly truncate and acutely bidentate, the sutural tooth small, the outer moderately long but not acicular, less than three times as long as wide and two-fifths wider than the prothorax, the punctures coarse but widely separated basally, denser toward the sides, very fine apically. Length 17.5 mm.; width 5.0 mm. Missouri.....**flumineus** n. sp.

Moderately large, though smaller than the preceding and rather narrower in form, blackish-piceous, slightly shining, the short stout decumbent hairs aggregated into dense irregular clusters, the erect hairs of the elytra numerous, rather long but not conspicuous; head not densely puncto-rugose, the antennæ (♂) very nearly as long as the body, rather stout, the third joint a little less than one-half longer than the fourth, or (♀) four-fifths as long as the body but otherwise nearly similar; prothorax subsimilar in the sexes, about a third wider than long, with parallel, unevenly rounded sides, the fine constriction behind the apical margin deep and acute, the punctures between the callous areas very coarse, deep and rather uneven; elytra nearly as in the preceding, except that the feebly sinuate apical truncatures are bounded externally by a long slender spine, the sutural spine small but aciculate; fifth ventral (♂) slightly longer than the fourth and evenly, rather broadly rounded, or (♀) nearly one-half longer than the fourth and more narrowly rounded, not barely at all longer than the fourth and more broadly rounded as in *flumineus*. Length (♂, ♀) 11.8-15.8 mm.; width 3.0-4.4 mm. Pennsylvania.....**incertus** Newm.

A—Similar to the preceding in every way but smaller and less stout, with the antennæ much more slender and with the very moderate spines not thick and directed strongly outward as in *incertus*, but thin and much more axial in direction; pronotal punctures (♀) still coarser and more uniform in size, the callous spots nearly similar, except that on the outer slope of the antero-sublateral spots there is a large shallow rounded pit; elytra similar but about three times as long as wide, the sinuato-truncate apices similar and with the sutural projection very small, the lateral being relatively much longer, very slender and spiculiform; erect hairs not more numerous but paler and more conspicuous. Length (♀) 13.0 mm.; width 3.4 mm. Wisconsin.....**externus** n. subsp.

Very small in size, more cylindric, pale red-brown, feebly shining; head not densely but irregularly sculptured; antennæ (♂) shorter than the body and unusually stout, very pale, pubescent, the spines small, not very divergent, the fourth joint scarcely more than twice as long as wide; prothorax nearly as in *incertus* but with the coarse yellowish decumbent hairs much closer, almost concealing the sculpture, which is nearly similar, the sides less rapidly rounding to the feebly constricted apical margin; elytra nearly similar in general form but only a little more than twice as long as wide and but about a fifth wider than the prothorax, differing from either of the two preceding forms in having the coarse decumbent yellowish hairs uniformly denser and less aggregated into dense clusters and in having the deep and relatively still coarser punctures closer; more impressed

and less diminishing posteriorly, being still rather large apically; apices nearly as in *incertus*; fifth ventral broadly truncate, rather shorter than the fourth. Length (♂) 8.5 mm.; width 2.4 mm. Indiana,—Levette..... **brevicornis** n. sp.

- 4—Form moderately slender, the third antennal joint always very much longer than the fourth.....5

Form very slender and more linear or parallel, the third antennal joint but very slightly longer than the fourth; elytral apices as in *villosus* throughout.....7

- 5—Elytra each transversely truncate at tip, the truncature limited by two equal straight slender spines. Body rather shining, piceous, the elytra, legs, antennæ and under surface paler; head very closely, strongly punctured; antennæ (♀) not quite as long as the body, very slender, sparsely pubescent, the spines small, rather flattened distally and with the internal, densely punctate opaque areas conspicuous; prothorax cylindric, rather longer than wide, the parallel sides feebly, subevenly arcuate throughout; surface very coarsely, deeply and closely but not confluent punctured throughout, without even a median smooth spot and with rather coarse, short, pale and decumbent hairs and a few spots of dense yellowish pubescence, of which one at each side just before the middle is especially dense and well defined; scutellum well developed, densely pubescent, semicircular as usual; elytra three times as long as wide, parallel, straight at the sides, dehiscent at apex, fully one-half wider than the prothorax, with sparsely scattered, irregular and dense pubescence but without erect hairs; punctures rather sparse, not very coarse, about half the diameter of the pronotal punctures basally, becoming fine and feebly asperulate distally; under surface finely, sparsely punctate, the prosternum coarsely and densely. Length (♀) 15.0 mm.; width 3.4 mm. Levette Cabinet, unlabeled.

abruptus n. sp.

Elytra each with a small deep apical sinus, which is limited internally by a small fine sutural spicule and externally by a longer, though moderate, more or less incurvate spine or tooth.....6

- 6—Prothorax (♂, ♀) about as long as wide, more or less feebly rounded at the sides. Pronotum (♂) very finely, densely punctate throughout and dull, or (♀) with coarse, deep, clearly defined and very close or crowded punctures and with the sides minutely subprominent at the middle, the pubescence tending to form two narrow ragged vittæ; scutellum well developed; antennæ only moderately slender basally, with small spines, distinctly longer (♂) or shorter (♀) than the body; elytra tapering slightly, rounding apically at the sides to the apex of the lateral spines, coarsely, rather closely punctate basally, finely but not asperulately toward apex; pale hairs rather long, decumbent, somewhat sparse, the condensed clusters small, irregularly scattered and not well defined. Length 14.5 mm.; width 3.2 mm. Atlantic states to Iowa and Texas. **villosus** Fabr.

A—Similar to *villosus* but paler in coloration, dark testaceous, more shining but with the elytra distinctly tapering from base to apex and the antennæ more slender though otherwise nearly similar;

prothorax (♂) not quite as long as wide, the parallel sides very evenly and rather strongly arcuate throughout, the dense fine punctures and dull surface nearly similar, the hairs short, even and sparse, with a small irregular dense sublateral cluster just before the middle and at base; scutellum much smaller, less than a third as wide as an elytron; punctures similar but tending more to lineal arrangement; fifth ventral rounded at tip as in the preceding. Length (♂) 12.5 mm.; width 2.8 mm. Texas.

scuticularis n. subsp.

Prothorax larger, inflated, distinctly wider than long, scarcely so wide at apex as at base, with the sides strongly rounding medially, subconstricted at apex. Body rather stouter, the elytra cuneiform, pale red-brown throughout; head densely and strongly punctate, the antennæ a little longer than the body, rather rapidly stouter basally, the spines very short and stout, the subbasal joints very coarsely, confluent punctured; prothorax (♂) very finely, densely punctate and dull, with a narrow spot behind the centre, which is coarsely punctate, also with two very fine blackish sublateral lines at each side in basal half, which are coarsely sculptured; scutellum as in *villosus*; elytra two and two-thirds times as long as wide, about two-fifths wider than the prothorax, the decumbent pubescence rather long, coarse and abundant, the condensed patches larger than in the preceding forms, the punctures coarse and close basally, becoming very fine and sparse distally, the apices as in *villosus*; fifth ventral broadly rounded. Length (♂) 13.8 mm.; width 3.4 mm.

Wisconsin.....*lacustris* n. sp.

- 7—Male with the thoracic punctures small and very close but not contiguous, the fine interspaces shining, the smooth median line entire, dilated behind the middle, fine anteriorly, bordered throughout its length by coarse punctures, the sparse pubescence forming an elongate sublateral condensed spot anteriorly and another in same line at base, with a narrow smooth line having a few coarse punctures connecting the two. Body very slender, parallel, blackish, the elytra, legs and antennæ dark brown, the latter slender, not quite as long as the body, the third joint much shorter than the first, not longer than the fourth, the spines small, finely punctured; prothorax as long as wide; scutellum rather small; elytra just visibly tapering from the base, more than three times as long as wide, two-fifths wider than the prothorax, the condensed patches loose and indefinite; punctures coarse, deep, close, separated by their own diameters, smaller though still rather strong distally; fifth ventral broadly, evenly arcuate. Length (♂) 12.5 mm.; width 2.6 mm. Levette Cabinet, unlabeled.....*medialis* n. sp.

A—Parallel, the elytra not evidently tapering, similar in general characters to *medialis*, except that the equally slender antennæ have the third joint slightly longer than the fourth though distinctly shorter than the first; prothorax (♀) fully as long as wide, parallel, the sides evenly and moderately arcuate, the surface coarsely, deeply and contiguously punctate throughout and evenly, sparsely and feebly pubescent, with a small smooth spot behind the centre;

elytra more than three times as long as wide, similarly coarsely and closely punctate but with the punctures more rapidly smaller and fine apically, the sparse vestiture but feebly and loosely nucleated; fifth ventral nearly semicircular. Length (♀) 12.0 mm.; width 2.5 mm. Canada (Ontario)...**canadensis** n. subsp.

- B—Nearly similar to the preceding in general form but larger, piceous-black, the elytra brighter testaceous, the legs and antennæ dark red-brown; antennæ (♀) two-thirds as long as the body, very slender, finely, sparsely punctured basally, with moderate spines, the third joint a little longer than the fourth and correspondingly shorter than the first, which is more densely pubescent; prothorax (♀) about as long as wide, the sides parallel but broadly, feebly angulate at or just behind the middle, dull in lustre, the punctures much smaller than usual in the female and very dense, with a small impunctate area behind the centre, the pubescence short, coarse, closely decumbent, rather abundant, nubilously aggregated toward the sides and along the median line anteriorly; scutellum moderate; elytra parallel, more than three times as long as wide, two-fifths wider than the prothorax, the sinus at the tips as in the preceding but rather larger, the punctures but very little larger though much deeper than those of the pronotum, well separated, smaller but distinct apically; fifth ventral very broadly and feebly arcuate at apex. Length (♀) 14.5 mm.; width 3.1 mm. Florida.

densicollis n. subsp.

Male with the densely and finely punctate pronotum even, except a narrow short impunctate line just behind the centre; elytral apices as in *villosus*.....8

- 8—Male with the fifth ventral broadly and evenly rounded. Body very slender, parallel, pale red-brown, the elytra, legs and antennæ rather paler and testaceous; head with rather small, close punctures and a flat glabrous impunctate median line posteriorly, becoming finely impressed anteriorly; antennæ (♂) very slender, not quite as long as the body, loosely and not coarsely punctate, with small spines, the third joint slightly longer than the fourth and almost as long as the first; prothorax slightly wider than long, the sides broadly but sharply angulate at the middle, thence rather strongly convergent and straight to the base and less convergent and also perfectly straight to the apex, which is evidently wider than the base; surface very finely, densely and evenly though shallowly and irregularly punctate and dull, the pale yellowish hairs sparse but condensed into a subeven narrow sublateral line, bending outward slightly, from the apical margin to behind the middle, this line from the middle to the base feebly subumid, more coarsely punctate and again pubescent at base; elytra parallel, more than three times as long as wide, only very little wider than the prothorax, the punctures moderately close and strong, smaller apically, the vestiture rather sparse, feebly condensed. Length 11.0 mm.; width 2.4 mm. A single unlabeled male from the Levette collection.....**defectus** n. sp.

- Male with the fifth ventral truncate at apex.....9
- 9—Form slender, parallel, the coloration and sculpture nearly as in the

preceding, the head more densely and strongly punctured and with trace of the frontal impunctate line; antennæ more developed, slender but rather more thickened basally, somewhat longer than the body, feebly spinose, the third joint but very little longer than the fourth and distinctly shorter than the first; prothorax smaller, slightly shorter than wide, broadly and evenly rounded at the sides, feebly constricted just before the base, which is as wide as the apex, finely, very densely and evenly punctate, the smooth spot behind the centre rather broadly oval and defined by coarser punctures; pubescence more diffused than in *defectus*, the sublateral and subentire vittæ broad and very feebly defined; elytra three times as long as wide and two-fifths wider than the prothorax, slightly narrowing from base to apex, the punctures strong and rather close, smaller but distinct apically, the pale decumbent hairs numerous, feebly nucleated and tending to form a few very irregular longitudinal vittæ; fifth ventral as long as the fourth, rounded at the apex, gradually becoming transverse medially. Length (σ^7) 11.8 mm.; width 2.6 mm. Texas.....**molliculus** n. sp.

Form not quite so slender, parallel, dark piceous-brown, the antennæ paler; head strongly, closely punctate, with a finely impressed stria throughout; antennæ nearly as in the preceding and somewhat longer than the body, except that the third joint is barely visibly longer than the fourth or shorter than the first; prothorax about as long as wide, parallel, with very evenly and moderately arcuate sides throughout, the basal constriction very feeble, the surface differently sculptured, dull, even, with rather large shallow close-set punctures and smaller close punctures filling the interspaces, the impunctate line behind the centre very narrow; pale pubescence rather coarse and abundant, unevenly diffused, the sublateral vittæ broad, irregular, loose and not defined; scutellum very densely punctate, semicircular; elytra parallel or very nearly, rather more than three times as long as wide, not over a fourth wider than the prothorax, strongly, not densely punctate, scarcely at all more finely apically, the irregular pale hairs tending to form three broad lines on each, separated by fine subtumid impunctate lines; fifth ventral abruptly and rectilinearly truncate at apex. Length (σ^7) 13.5 mm.; width 2.9 mm. Iowa (Keokuk)....**parallelus** Newm.

Externus will scarcely prove to be the same as *neglectus* Lec., though the size is about the same; the prothorax in *externus* is similar to that of *incertus* and not shorter; the form is more slender than in *incertus*, the antennæ notably more slender, but the outer apical spines of the elytra are similarly aciculate and not denticiform. My nine examples of *villosus*, three males and six females, from Texas, Iowa (Keokuk) and several parts of New England differ in such a way as to indicate a mixture of what may be subspecies or perhaps higher forms.* With the male type of *medialis*

* The prothorax normally is very nearly as long as wide, but one female example has this somite fully two-fifths wider than long.

I place a North Carolina female, with narrow and rather shining prothorax, having very moderate and rather evidently separated punctures; it may not be exactly conspecific. The species of *Hypermallus* are evidently very numerous but form a difficult study, and those above enumerated probably form but an insignificant part of them. Some of the Mexican species belong to other genera such as *Anoplium*.

Anoplium Hald.

The type of this group of species, which can very well assume generic rank, is one of the most aberrant in having the pubescence uniform and the antennal spines obsolete. An examination of the apex of the third antennal joint shows, however, a sharply marked and very acutely prominent angle at the position of the usual spine, proving that the difference is only one of degree and is not a radical departure in structure like that of *Tylonotus*, for instance. Besides *pumilum* and *inermis* of Newman, *mæstum*, *cinerascens* and *debile* of LeConte, and *truncatum* of Haldeman, all of which I have before me,—the last being different from *debile* and not identical as stated in our lists—the genus will comprise *punctatum*, *spurcum* and *imbelle* of LeConte, *grisescens* Bates, reported from southern Florida by Schaeffer, *cinereum* Oliv., *brevidentis*, *simile*, *subdepressum* and *niveivestitum* of Schaeffer, and possibly *alienum* Lec., which is however aberrant, the elytra having long sparse flying hairs and being rounded at the apices, with spiniform sutural angle; if not of this genus it constitutes in all probability a distinct genus, still undescribed; it inhabits Arizona and is 14.5 mm. in length.

The following genus is rather puzzling in regard to its true position. It does not seem to have been studied by Linell or Schaeffer and is probably undescribed.

Geropa n. gen.

Body subparallel, rather slender, only moderately convex, not densely but uniformly pubescent, with very evenly fusoid, bi-truncate and completely unconstricted prothorax and very slender, completely unarmed and moderate antennæ, bristling with long slender hairs; the eyes and general facies are somewhat as in

Anoplum. The palpi differ but little in size, the last joint of the maxillary slender, somewhat enlarged and obliquely truncate at tip, the mentum very short and transverse, the anterior coxæ globular, very approximate, being separated by a fine lamina, the intermediate also narrowly separated by a long and very finely acuminate process of the mesosternum, extending at the sides to the mes-epimera, the met-episterna as in *Anoplum*, the femora slender, unarmed; tarsi small, very slender, loosely padded beneath, except the basal joint of the posterior, which is a little longer than the next two combined. Other characters may be mentioned in the following description of the type:

Geropa æquicollis n. sp.—Moderately slender and small in size, dull, the elytra rather shining, pale red-brown in color throughout, the under surface, legs and antennæ still paler; head and prothorax throughout with rather small, equal, shallow and polygonally crowded punctures; hairs sparse and decumbent and with others still sparser and erect; eyes separated by a little less than their width; antennæ (♀) extending nearly or quite to the elytral tips, very slender, not compressed, filiform, gradually very slightly thicker basally, the third joint one-half longer than the first or fourth; outer joints gradually shorter and thinner, the eleventh simple; prothorax very symmetrical, convex, distinctly wider than the head, as long as wide, the sides very evenly and rather strongly arcuate from the extreme basal margin to the apex, which is truncate and equal to the truncate base, both extremely finely margined; surface with a very fine and incomplete median impunctate line; scutellum small, rounded, minutely and closely punctate and moderately pubescent; elytra three times as long as wide, barely visibly wider than the middle of the prothorax, parallel, slightly dehiscent at apex, the apices narrowly and very evenly rounded, without trace of sutural angle; surface even, with moderately small and well separated punctures, becoming very fine distally and with a widely spaced series of slightly larger punctures basally at outer third; prosternum long as in *Hypermallus*; abdomen very finely, sparsely punctate and sparsely pubescent, the fifth segment evenly rounded, the first and second subequal. Length (♀) 8.8 mm.; width 1.9 mm. Texas (Brownsville),—Wickham.

There are a few long flying hairs on the elytra, confined principally to the lateral parts basally. This genus may take its place just before *Tylonotus* for the present.

Heterachthes Newm.

This genus is well distinguished from *Compsa*, with which it is united by Lacordaire, by having no trace of the fine dorsal carina of the subbasal antennal joints; the species allied to *ebenus* Newm.,

inhabiting exclusively the southern Atlantic states, may be distinguished as follows:

Elytra narrowly and obliquely sinuato-truncate at tip, the exterior angle very obtuse and blunt, the sutural slightly produced and acute... 2
 Elytra not truncate at tip, rounding regularly to the sutural angle, which is acute but not at all spiniform..... 3

Body larger and a little stouter, slender, parallel, subdepressed, deep black, the tibiæ, tarsi and antennæ picescent; lustre dull, the elytra alutaceous; eyes separated by evidently less than their width, the head and prothorax very finely, densely punctate, a narrow median line impunctate: antennæ (♂) about a fifth longer than the body, joints 3-6 abruptly much thicker than the very slender and filiform outer part, smooth and shining, with merely a few long erect hairs, the fourth joint four-fifths as long as the equal fifth or sixth and three-fourths as long as the third; prothorax fully two-fifths longer than wide, the sides parallel and straight anteriorly, gradually very feebly arcuato-convergent posteriorly to the feeble subbasal constriction, the median line slightly tumid just behind the centre, the sparse hairs decumbent and very minute; elytra a little more than three times as long as wide, two-fifths wider than the prothorax, minutely, closely sculptured and with some small sparse subasperate punctures, generally lineate in arrangement and bearing short, stiff and very inconspicuous fulvous hairs. Length (♂) 11.5 mm.; width 1.9 mm. Florida..... **ebenus** Newm.

Similar to the preceding but much smaller and more slender, dark piceous-brown in color, alutaceous, the sculpture throughout nearly similar; eyes less widely separated; antennæ similar but only slightly longer than the body, the third joint relatively thicker, the fourth shorter, only three-fourths as long as the fifth and two-thirds as long as the third; prothorax not quite so elongate, otherwise similar, except that the basal constriction is deeper and less obtuse and the median line faintly tumescent from behind the middle nearly to the apex; elytra similar throughout but relatively a little narrower, only about a third wider than the prothorax. Length (♂) 9.0-9.3 mm.; width 1.5-1.6 mm. Florida (Biscayne Bay),—Schwarz.

floridanus n. sp.

3—Similar to *ebenus* but much smaller, more slender and blackish-brown, the antennæ (♂) distinctly longer than the body, the joints similarly proportioned but not so elongate, the head and prothorax similarly sculptured; prothorax similarly elongate but with the sides broadly and feebly arcuate, converging slightly anteriorly and posteriorly to the similar subbasal constriction, the median line broad and flat behind the centre, without trace of tumidity; elytra similar though a little more shining, more finely sculptured and punctate and relatively narrower, only about a fourth wider than the prothorax, the sparse prostrate hairs similarly minute, the erect hairs nearly similar. Length (♂, ♀) 7.7-9.3 mm.; width 1.3-1.5 mm. North Carolina (Southern Pines),—Manee..... **exilissimus** n. sp.

The following is allied to *quadrимaculatus* Newm.; it represents a type differing greatly from the three preceding species in facies and sculpture, and, together with *nobilis* and *quadrимaculatus*, is probably subgenerically different:

Heterachthes fluviatilis n. sp.—Slender, depressed, parallel, pale testaceous throughout, subglabrous, the elytra with a few sparse punctures bearing very short stiff erect fulvous setæ; head but little darker, strongly, rugosely sculptured, the eyes more widely separated than in *ebenus*; antennæ (♂) as in *quadrимaculatus* in general form but with the third joint materially shorter and the fourth longer, the fourth being fully three-fourths as long as the third, while in that species it is only about three-fifths as long as the third; prothorax similarly smooth but shorter, only a little longer than wide, similarly biconstricted and with the apex even more obviously wider than the base, smooth and almost impunctate; scutellum very small; elytra rectilinearly parallel to the tips, three times as long as wide, only about a fifth wider than the apex of the prothorax, the apices evenly rounding to the sutural angles, which are right and rather blunt; surface of each having an oblique oval flavous anterior spot as in *quadrимaculatus* and another, very small and faint, near posterior third. Length (♂) 7.3 mm.; width 1.4 mm. Missouri.

Differs from *quadrимaculatus* in its narrower, more rectilinear and more depressed elytra, which round to the apices much more abruptly and posteriorly, in the much greater longitudinal distance between the elytral spots, which are more unequal in size and distinctly in antennal structure.

The very small scutellum, radically different sculpture and biconstricted prothorax are the principal generic characters separating these species from those of the *ebenus* type.

Malthophia n. gen.

Body very slender, punctate and uniformly briefly pubescent; head wider than the prothorax, vertical in front, the eyes coarsely faceted and very large, completely contiguous above, separated by rather more than a fourth the entire width beneath, deeply emarginate, bordering the antennal tubercles, which are large, prominent and very approximate, the anterior margin of the eyes slightly sinuate beneath near the mandibles, the latter small, stout, smooth, with a depressed pubescent external patch on each; palpi unequal, slender, the last joint acuminate, with the tip narrowly truncate; antennæ much longer than the body in the male, very finely filiform and simple, the basal joint short, stouter than the others, sub-

cylindric, flexed inwardly and prominent at apex; prothorax cylindric, longer than wide, much narrower than the base of the elytra, which are very long, gradually and feebly tapering from base to apex, with even punctate surface, the apices narrowly and evenly rounded, without sutural angle; anterior coxæ rounded, prominent, contiguous, their cavities widely open behind, the middle coxæ contiguous, large, reclined, conoidal and prominent; mesosternum flat; met-episterna moderately wide, subparallel anteriorly, attenuated behind; legs very slender, the femora unarmed, moderately but suddenly inflated in more than apical half; tarsi short but very slender, cylindric, with close pubescence beneath, the first joint of the posterior longer than the next two, second parallel, twice as long as wide, the third but little wider than the first, longer than wide, moderately emarginate; claws very minute, slender, arcuate.

I am unable to place this genus very accurately in the scheme of Lacordaire, though in most of its characters it seems to accord best with the group "Phlyctenodides"; it is isolated there however because of its remarkably developed and closely contiguous eyes. The type is the following:

Malthophia oculata n. sp.—Slender, moderately convex, slightly shining, dark reddish-brown throughout, the legs and under surface more blackish; pubescence short, pale, rather coarse, decumbent, even and not dense, with some erect hairs in addition anteriorly; antennæ about three-fourths longer than the body, extremely slender, joints three to seven equal, very long, each nearly twice as long as the small and moderately stout, feebly sigmoid basal joint, the outer joints gradually but little shorter, the pubescence short, abundant, uniform and suberect with some long erect hairs beneath basally; prothorax a fourth longer than wide, cylindric, slightly constricted basally, the sides subtuberculate just behind the middle, the surface rather strongly, irregularly punctate and with two subbasal pits which are more shining and more clearly punctate; base rather narrower than the apex; scutellum small, parabolic, about as long as wide, nearly nude, scarcely punctate; elytra not quite four times as long as wide, nearly one-half wider than the prothorax, feebly tapering throughout, very gradually and moderately dehiscent from far before the middle, the surface even, not very coarsely but deeply, rather closely punctate and almost equally strongly so to the narrowly rounded apices; under surface finely but rather closely punctate, the fifth ventral arcuato-truncate. Length (♂) 10.0 mm.; width 1.8 mm. California (San Diego),—Ricksecker.

A single example of this anomalous species was sent to me some

time ago under the name *Aneflus linearis* Lec. No notes regarding its habits or food-plant have been received.

Tribe CALLICHROMINI.

Under this heading I would place all our remaining Cerambycids, except the Clytini and Lepturini and in addition a few aberrant and very limited tribes necessitated by aberrant forms, such as *Necydalis*. As a section of the subfamily it is distinguished from the preceding tribes principally by having the eyes very finely faceted.

Callimus Muls.

A genus of small slender species, with flattened entire elytra and finely faceted eyes. The species are rather numerous in the Pacific region and in Eurasia but are wanting on the Atlantic coast. The four following seem to be undescribed and constitute two well defined sections of the genus, represented by *ruficollis* and *cyanipennis* of LeConte, who erected for them the genus *Pilema*, said by Bates to be the same as *Callimus*:

Callimus longicollis n. sp.—Rather slender; head, antennæ, legs and under surface black throughout, the pronotum bright red, largely black at apex and base, the basal black area bilobed anteriorly; elytra bright steel-blue; head about as wide as the prothorax, with rather long neck, finely, closely, longitudinally punctato-rugose, the antennæ (♂) slender, filiform, not quite as long as the body, the third joint much shorter than the fourth and slightly shorter than the first, the erect flying hairs long but sparse; prothorax much longer than wide, obtusely tuberculate at the sides behind the middle, trituberculate on the disk, which is polished and impunctate throughout, very feebly tumid along the median line anteriorly, flat and rugulose toward the basal margin; scutellum small, subquadrate; elytra three times as long as wide, nearly a fourth wider than the prothorax, parallel and straight at the sides, conjointly semi-circularly rounded at apex, the sutural angles acute and very minutely prominent; surface alutaceous or subopaque, strongly, closely punctate, the punctures closely serial in arrangement, a little smaller apically; under surface finely chagrined and subopaque; prosternum red, the coxæ and their lateral angulation black; legs moderate, with long flying hairs. Length (♂) 6.2 mm.; width 1.3 mm. California (Kaweah).

Allied to *ruficollis* but smaller and differing in its impunctate and basally unimpressed prothorax, the latter with the sides converging from the post-medial rounded prominence to the apex and bisinuate, the apex rounded and narrower than the truncate base.

Callimus opacipennis n. sp.—Rather slender, much depressed, black, the prothorax above and beneath red, the elytra black, with a very faint greenish or violaceous tinge; abdomen, legs and antennæ throughout black; head with dense longitudinally anastomosing sculpture; antennæ (♂) not quite as long as the body, slender, slightly thickened distally, joints three to five increasing in length, the third scarcely more than twice as long as the second, similar in the female but a little shorter; prothorax as long as wide, narrower in the male, obtusely tuberculate near the middle of the sides, the apex feebly arcuate and as wide as the base; surface trituberculate, the median tubercle being more basal, not definitely punctate, the base transversely black but not impressed; elytra three and one-half times as long as the prothorax and distinctly wider, rectilinearly parallel at the sides, very obtusely rounded at apex, not dehiscent, the sutural angles dentiform; surface flat, opaque, the moderate punctures close-set, very deep and perforate, fine apically, the interspaces strongly and coarsely grano-reticulate; legs slender, the femora abruptly clavate, the posterior gradually enlarged, not so clavate, the erect hairs long and black. Length (♂, ♀) 4.5–6.2 mm.; width 0.8–1.4 mm. California (San Diego),—Ricksecker.

Differs from the preceding in its black opaque elytra and shorter prothorax. The sexual differences affecting the abdomen are extraordinary. In the male the abdomen is even in surface throughout and cylindrically convex, with simple transverse sutures, the first segment longer than the next two combined, the second longer than the third, the fifth very much shorter than the fourth and deeply sinuate. In the female the first segment is as long as the next three combined, the second strongly sinuate throughout at apex, with a very large transversely crescentic apical area densely clothed with fulvous tomentum, the third very short, strongly bowed to fit the preceding, the fourth rather long, unmodified, the fifth normal, transverse and broadly truncate. The male is very much smaller than the female, having the smaller of the above dimensions. I am unable to state whether these remarkable sexual differences are general among the California representatives of *Callimus*, apparently not having the female of the other species, but if so *Pilema* will probably have to be restored.

Callimus variipes n. sp.—Shining throughout and bristling with long erect flying hairs; head, pronotum and entire under surface as far as the abdomen deep black, the latter red throughout; legs very pale flavo-testaceous, the apex of the femora and tibial apex, also the apices of the tarsal joints, black; head narrower than the prothorax, with small and rather sparse punctures, becoming closely rugose at the sides of the neck; antennæ (♂) nearly as long as the body, often perceptibly shorter,

slender, black, shining and with long sparse setæ basally, opaque and minutely, densely, cinereously pubescent and picescent thence to the apex, the third joint much shorter than the fourth and scarcely more than twice as long as the second; prothorax as long as wide or a little shorter, more acutely but finely tuberculate at the sides near the middle than in the preceding, bituberculate on the disk, the tubercles more separated, the depressions strongly and loosely punctate, the median parts broadly flat anteriorly, the median part broadly, feebly tumid toward base; scutellum very small, wider than long; elytra two and one-half times as long as wide, a fourth to evidently less wider than the prothorax, tapering feebly from base to apex, slightly dehiscent but only at the apex, the sides rounding to the apices, the apical angles very acute and dentiform; surface dark steel-blue to greenish, polished, strongly and deeply, rather closely and irregularly punctate, with short stiff erect hairs, the punctures not serial in arrangement, the flanks concavo-deplanate posteriorly. Length (♂) 5.7-7.0 mm.; width 1.3-1.8 mm. California, (Mokelumne Hill, Calaveras Co.),—Blaisdell.

Distinguishable from *cyanipennis* Lec., to which it is rather closely allied, by the very different coloration of the legs. The elytra are dark steel-blue or greenish-blue and strongly shining.

Callimus dehiscens n. sp.—Similar in dorsal coloration and lustre to the preceding, the under surface dark piceous, with the entire abdomen red, the femora pale flavo-testaceous, black at tip, the tibiæ and tarsi throughout pale piceo-testaceous; long flying hairs abundant at the sides of the body and on the legs; head more strongly and closely punctate than in the preceding; antennæ (♂) similar in structure and vestiture but paler, piceo-testaceous, black only at and near the base, stouter distally in this and the preceding than in *longicollis*; prothorax as in *variipes* but more strongly and closely punctate in the concave parts, the lateral prominences more feeble, obtusely rounded and more posterior in position, the median line narrowly tumid near the apex but not at base, the wide post-medial subtumid smooth area distinct; elytra nearly as in the preceding but much more rapidly tapering from base to the apical arcuation, distinctly dehiscent for a much greater distance from the tips, with the sutural margin gradually rounding outwardly, the inner angle acute but not so prominent; punctures coarser and not so close; flanks steeply declivous throughout, not at all deplanate. Length (♂) 6.4 mm.; width 1.6 mm. California (Los Angeles Co.).

A second specimen before me is without indication of locality but is probably specifically identical with the type; it is nearly similar in every way, except that the elytral punctures are closer and not so coarse, the under surface, except the red abdomen, deep black, and the tibiæ of the same flavate color as the femora and similarly broadly tipped with black, but with the pale tarsal joints tipped with black as in *variipes*. This species is very distinct from *variipes* in elytral structure.

Rosalia Serv.

The single species known from North America probably varies as much, due to local conditions, as does the European *alpina*, and judging from the number of names that have been given the latter under the title "aberration," its plasticity must be exceptional. I have noted two especially conspicuous variations of our *funebis*, defined below, it being unnecessary to give very detailed descriptions, as the primary scheme of structure and ornamentation is the same in all.

Elytral bands of pale pubescence narrowing outwardly; mandibles small; antennæ (♂) rather slender, not quite one-half longer than the body, the last joint with the moderately demarcated apical process distinctly tapering to the very narrowly obtuse apex. Length 26.0 mm.; width 8.0 mm. Southern Alaska to Oregon... **funebis** Mots.

A—Rather larger, otherwise similar, except that the mandibles are notably larger and thicker, more irregular and more deeply impressed on their dorsal surface, the antennæ (♂) a little longer and thicker, with the process of the last joint rather less tapering and more broadly obtuse at tip, the last joint (♀) as long as the preceding. Length 27.0–33.0 mm.; width 7.0–8.4 mm. California.

mandibularis n. subsp.

B—Narrower in form, the prothorax similar but not so transverse; antennæ (♀) shorter, not longer than the body, the last joint shorter than the preceding; transverse pale bands of the elytra much wider, the posterior not at all narrowed externally. Length (♀) 26.5 mm.; width 6.7 mm. New Mexico (Jemez Springs).

acomana n. subsp.

There is a good deal of variation in the maculation of the elytra; in the Washington State and northern Oregon form, which I have identified as *funebis*, there is much more of the white ornamentation than in *mandibularis*, where the bands are narrow; in one example, from Tacoma, there is a long white humeral lunule, which sends off a quadrate inner ramus, and the posterior band is connected with the apical white patch on one elytron and nearly so on the other. In *acomana* there is a humeral streak of white, which is connected with the anterior band by a slender ramus, and the anterior band is angularly produced posteriorly along the suture. But only characters of a structural nature are employed in defining the above subsidiary forms, which I think have more the nature of subspecies than aberrations or ornamentation variants.

Callichroma Latr.

The species of this genus are frequently large and of brilliant coloration, though generally monochromatic above; the antennæ are deep black and very long in the male; the eyes are deeply emarginate and finely faceted.

Callichroma smaragdina n. sp.—Rather large, only moderately convex, very bright uniform green above, paler metallic green beneath, the abdomen rufo-ferruginous, the femora testaceous, slightly tipped with black throughout, the tibiæ and tarsi black; head, antennæ and prothorax nearly as in *plicata*, except that the strong transverse rugæ of the pronotum are wanting and replaced by fine and separated, scarcely visible plications; elytra similar, sometimes less tapering with the sides very feebly converging from base to the apical arcuation, the surface with the two fine raised lines more evident, especially the external; under surface similar; male with the fifth ventral deeply and broadly, angularly emarginate, the apex of the angle blunt. Length (♂) 30.0–32.0 mm.; width 7.9–8.2 mm. Texas.

Allied to *plicata* Lec., but larger, brighter and purer green in color, the elytra less tapering, the pronotal plicæ scarcely evident and differing especially in the angulate form of the notch at the end of the male abdomen, this being evenly parabolic in *plicata*.

***Callichroma compressipes** n. sp.—Male more convex, the elytra strongly tapering from base to apex, rather dull in lustre and dark blue-green throughout above, polished and bright golden-green throughout beneath; two anterior femora red, black toward base and at tip, the posterior red, black in apical two-fifths, the tibiæ and tarsi black; prothorax as in the preceding; elytra two and two-thirds times as long as wide, very much narrowed from base to apex, cuneiform, densely punctate as usual and with small ruguliform undulations, also with feeble and indistinct, approximate and slightly convex lines, the hairs very short and black, abundant and conspicuous; hind femora obliquely flattened above, not quite twice as long as the intermediate, the hind tibiæ broad, strongly compressed, straight internally, broadly and evenly arcuate externally, broadly concave throughout on the under surface; notch of the fifth ventral parabolic; prosternum concave, transversely plicate. Length 33.5 mm.; width 8.8 mm. Guatemala (Esquintla).

The legs are colored nearly as in the preceding and *plicata*, except that the anterior and middle, but not the posterior, femora are blackish basally, as well as tipped with black and the very much longer hind femora are black in distal two-fifths; the broad compressed hind tibiæ and shining green abdomen are of course very different.

***Callichroma regalis** n. sp.—Still larger but of similar form, the elytra

very strongly cuneiform; upper surface very dark and obscure greenish-blue and with dense velvety lustre; under surface bright metallic greenish-blue throughout and strongly shining; legs colored exactly as in the preceding; prothorax similar in form to the two preceding, except that the anterior margin, instead of being prominent and rather narrowly rounded medially, is broadly arcuato-truncate, the surface almost even, densely punctate but with the short black hairs dense and distinct as on the elytra, the latter as in the preceding in form but darker and much more densely black velvety-pubescent, the outer raised line feebly shining; abdomen very gradually and acutely tapering, the notch very broadly parabolic, not so deep as usual; hind femora and tibiæ as in the preceding, except that the outer contour of the tibiæ is broadly arcuate in apical half only, becoming straight and gradually converging to the base in about basal half; antennæ (♂) very long, much more than twice as long as the body, or (♀) barely at all longer than the body. Length 40.0-41.0 mm.; width 10.4-10.6 mm.; length of the last antennal joint (♂) 27.0 mm. Mexico (Guerrero),—Baron.

I cannot identify either of the last two species with any of the Mexican and Central American forms enumerated by Bates, and therefore conclude that they are present as nondescripts in various collections.

Dendrobias Serv.

In this genus of massive shining glabrous longicorns, the species adhere closely to the generic model and are but slightly diversified. *Dendrobias* is allied closely to *Trachyderes*, differing only in having elongate mandibles in the male, larger and broader tarsi, and in style or type of ornamentation; these generic differences might seem rather unimportant but are apparently valid among such very non-plastic forms. Five species seem to be evident as shown by my material as follows:

Posterior pale spots of the elytra, when not expanded, elongate, subparallel and extending from the apex along the median line of each elytron not quite to the middle; third antennal joint wholly black, the antennæ more slender and less compressed in both sexes; scanty hairs of the under surface notably long; prosternum of the male densely and strongly, irregularly punctured, with the usual median smooth line sharply defined. Length (♂, ♀—excluding mandibles) 23.5-26.0 mm.; width 8.5-9.5 mm. Mexico (Guerrero). [♀ = *D. quadrimaculatus* Dup.].....***mandibularis** Serv.

Posterior pale spots, when in correspondingly reduced stage, not elongate and subparallel but shorter and broadly oval, occupying nearly the entire width of each elytron posteriorly, rounded anteriorly, sometimes broadly fused with the anterior subquadrate spots; hairs, on the very limited portions of the under surface on which they appear,

- very short and inconspicuous; third antennal joint nearly always having a large fulvous spot, homologous with the basal pale part of the succeeding joints to the apex; joints seven and eight in the female almost wholly dark in color as in the preceding. 2
- 2—Pale spot of the third antennal joint always large and well developed, extending from a little beyond the middle of the joint nearly to the base; normal condition of the elytral pale spots separated, the suffused condition exceptional; size larger. 3
- Pale spot of the third joint always small, sometimes obsolete; normal condition of the elytra almost entirely pale, though similarly black at base; size somewhat smaller. 5
- 3—Body narrower in form, pale testaceous in color, the elytra with the dark areas, which are normally black, well separating the posterior spots from the broad anterior band in specimens at hand; scutellum testaceous; prothorax relatively much smaller than usual; irregular punctures of the male prosternum well separated. Length (♂, ♀) 20.0–22.0 mm.; width 7.3–7.8 mm. New Mexico,—Snow.

debilicollis n. sp.

Body broader in form, deep black throughout, except the pale elytral and antennal maculation, the abdomen as usual pallescent apically. 4

- 4—Hind body suboblong, only slightly narrowed from the base, the elytra broadly rounded at apex; scutellum not more than half as wide as the distance thence to the humeri; smooth portion of the mesosternum (♀) longer than wide, the eighth antennal joint (♀) barely one-half longer than wide. Length (♂, ♀) 27.5–28.0 mm.; width 9.5–10.0 mm. Texas,—Dunn. **virens** n. sp.

Hind body strongly cuneiform, very rapidly narrowed from the base, the elytra each very narrowly subtruncate at apex; scutellum more than half as wide as the distance thence to the humeri; smooth portion of the mesosternum rather wider than long; eighth antennal joint (♀) nearly twice as long as wide. Length (♀) 24.8 mm.; width 9.0 mm. Lower California. **peninsularis** n. sp.

- 5—Form somewhat narrow, the elytra moderately narrowed from the base, more so than in *virens* but less than in *peninsularis*, the pale elytra sometimes having a small marginal maculation behind, and the suture another at, the middle,—showing derivation from the quadrimaculate type—black to piceous-black; pale spot of the third antennal joint very slightly behind the middle and more toward the outer side; scutellum rather less than half as wide as the space thence to the humeri; punctures of the male prosternum small and widely separated, the median smooth line very much broader and less sharply defined than in any of the preceding. Length (♂) 20.0–24.0 mm.; width 6.7–8.0 mm. California (near Yuma).

reductus n. sp.

Three of the males of *reductus* before me have the long slender mandibles tolerably uniform and of the usual apically inflexed form, but the fourth male is anomalous, having mandibles that differ but little from those of the usual female type, being small, thick,

rugose, dentate within and wholly without indication of the apical inward flexure of the normal male. This indicates that the male mandibles vary in development, as in so many Prionids and elsewhere when a special part not of direct sexual utility is unusually developed sexually.

Lissonotus Dalman.

Here again the species adhere very closely to a common type of structure and ornamentation, so that characters, generally of subordinate value, become enhanced in much the same way as those serving to distinguish the genera in this part of the series. The following is probably the smallest known species:

Lissonotus lucanus n. sp.—Much more slender than usual, strongly convex, deep black throughout and polished, almost glabrous; eyes separated by about their own width, the front very finely, sparsely punctate; antennæ (♀) three-fourths as long as the body, strongly compressed and compact as usual but relatively narrower, the subapical joints fully as long as wide, except the tenth, which is a little shorter than wide; prothorax longer than usual, two-fifths wider than long, almost evenly rounded at the sides and without the submedial protuberance of the other species, finely, very remotely punctate, the larger scattered punctures also small and inconspicuous, the punctures on the flanks sparse and much less conspicuous than usual, though strong, the erect hairs of the flanks much less numerous; scutellum acutely triangular, one-half longer than wide; elytra narrowed rapidly from the base, the apices narrowly rounded. Length (♀) 12.0 mm.; width 4.0 mm. Lower California (San Jose del Cabo).

Differs from *multifasciatus*, examples of both sexes of which I have from Guerrero, in its much smaller size and more slender form, less transverse and laterally non-tuberculate prothorax, finer and sparser punctures and shorter and more slender legs; it has the same transverse white elytral fascia just before the middle. This species cannot be the same as that called *puncticollis* by Bates, after Dupont in the Sallé collection, from Cape San Lucas and Mexico, for the punctures are notably finer and feebler than usual. I have a specimen labeled simply "Lower California," however, in which the thoracic punctures, while sparser than in *multifasciatus*, are stronger; this may possibly be the *puncticollis* of Bates; it is much larger than *lucanus* and more elongate than *multifasciatus*, and has joints eight to ten of the female antennæ much shorter than wide and with lateral thoracic protuberance, although the

prothorax is less transverse than usual. In the female of *multifasciatus* the eyes are separated by one-half more than their width, the punctures of the front being coarse deep and much closer than in either *lucanus* or the female example above identified very doubtfully as *puncticollis*.

Stenaspis Serv.

The following species are allied respectively to *solitaria* and *verticalis*, but differ in each instance in structural characters that cannot be overlooked:

Stenaspis lugubris n. sp.—Body similar to *solitaria* in the uniform deep black coloration, sculpture and lustre throughout, but smaller in size and more parallel in form; antennæ (♂) shorter, not more than a third longer than the body, the fourth joint but little shorter than the fifth, the last but feebly arcuate; head much smaller in size; prothorax similar, except that the lateral tubercles are less prominent and more obtuse; elytra shorter and only feebly narrowed from the base, the apex more broadly rounded; punctures of the sharply defined transverse prosternal patches in the male small and well separated, the patches widely separated, the intermediate surface simply coarsely and sparsely punctate, not impressed; legs shorter and more slender, without the feeble bluish reflection of *solitaria*; hind femora with a medial series of about three coarse foveæ on the outer face. Length (♂) 23.0–26.0 mm.; width 7.0–7.7 mm. Arizona (Sta. Rita Mts. and other points in the southern part of the State).

In *solitaria* the size is much larger and the form stouter, the elytra in the male longer and more rapidly narrowed from base to the relatively narrower apex, the antennæ longer, with the fourth joint more distinctly shorter than the fifth and the last joint very strongly curved and with relatively longer appendage, the legs long and stout, the hind femora simply evenly and sparsely punctate on the outer face and without trace of the series of foveæ; finally, the anterior coxæ are almost twice as widely separated and the sharply defined punctured spaces of the male prosternum are more closely punctate and very much less widely separated, the intermediate surface with a large, circular and shallow foveiform pit.

Stenaspis arizonicus n. sp.—Form, dorsal coloration and lustre throughout as in *verticalis* but a little narrower; head and prothorax similar in almost every way, but with the antennæ (♂) shorter, slender, the joints, especially outwardly, very much less elongate, the last shorter and less slender; elytra nearly similar in general form but with the punctures finer and very much denser, transversely coalescent, producing a vermiculately

rugulose sculpture; tarsi smaller and less dilated; punctuation of the sharply defined transverse areas of the male prosternum fine, extremely dense and coalescent, with dull lustre, the patches rather narrowly separated, their inner margins moderately diverging antero-posteriorly. Length (♂) 24.8 mm.; width 7.5 mm. Arizona (Baboquivari Mts.),—Snow.

The various forms of the *verticalis* group represented in my collection at the present time may be briefly outlined as follows, from the male in every case:

- Basal joint of the antennæ wholly black in the male, generally red basally in the female.....2
 Basal joint suffused with red basally in both sexes.....3
 2—Under surface entirely dark red-brown in color; elytral punctures small, dense, vermicularly coalescent; antennæ slender, one-half longer than the body; inner margins of the prosternal densely punctate areas but feebly diverging antero-posteriorly. Length 24.8 mm.; width 7.5 mm. Arizona.....*arizonicus* Csy.
 Under surface wholly deep black, excepting a sharply defined median area of the metasternum and the entire abdomen, which are dark red; elytral punctures much coarser, everywhere well separated, the two discal impunctate lines much better defined, the punctures along their edges sparsely mingled with some that are a little coarser; antennæ notably stout, four-fifths longer than the body; densely punctate areas of the prosternum with their inner margins very rapidly and widely diverging antero-posteriorly. Length 27.0 mm.; width 8.0 mm. Mexico (Guerrero),—Baron....**validicornis* n. sp.
 3—Elytra relatively more elongate, with the sides sensibly more rapidly converging from base to apex, strongly shining, the punctures rather small, uniform throughout and widely separated, the impunctate lines feebly defined and partially obliterated; coloration of the under surface and nature of the prosternal patches nearly as in *validicornis*, the antennæ similarly long but not so thick basally, only a little thicker than in *arizonicus*. Length 22.0–28.0 mm.; width 6.8–8.8 mm. Mexico (Iguala in Guerrero).....**verticalis* Serv.

The females, of which I have exponents in *validicornis* and *verticalis*, are sculptured as in the males on the upper surface and are a little shorter and more parallel in form, the coloration of the under surface rather more obscure and the antennæ only about as long as the body. The very dense sculpture of the elytra in *arizonicus* is a striking differential character; in *validicornis* the punctures are much less close, not at all confluent and about as sparse as in *verticalis* but a little stronger.

Crioprosopus Serv.

The following species is allied to *iridescens* White, but seems not to have been included in the material sent by Mr. Harford to Mr. Bates.

***Crioprosopus præstans** n. sp.—Stout, convex, dark rufo-piceous and dullish anteriorly, the elytra highly polished, not translucent, bright metallic green, the entire under surface and legs dark red-brown, the femora indefinitely blackish distally; head deeply sulcate to the hinder line of the eyes, finely, sparsely punctate, the antennæ black, a fourth longer than the body; prothorax transverse, convex, very coarsely, densely punctate, obtusely prominent and subtuberculate at the sides behind the middle, the median line depressed, flat, finely, sparsely punctate, gradually wider basally and with a short axial carina medially, the sublateral subbasal impressions simple, deep and longitudinal, the inner curving and obsolescent anteriorly and inwardly about the medial convexity, not reaching the median line; scutellum black, rufescent medially, very acute, more than twice as long as wide; elytra four time as long as the prothorax and not wider, feebly tapering, smooth, becoming slightly crumpled basally, minutely, sparsely punctured throughout, the impunctate lines well defined, disappearing posteriorly, the apices obliquely truncate; prosternal patches of the male sharply limited, separated by a narrow parallel line, very coarsely, closely punctate, the interspaces flat and minutely punctulate, the patches not extending posteriorly between the coxæ. Length (♂) 36.0 mm.; width 11.2 mm. Mexico (Guerrero),—Baron.

The following may be regarded as a subspecies of *præstans*:

***Crioprosopus semiplicatus** n. subsp.—Slightly narrower and more parallel, nearly similar in coloration, except that the metallic lustre of the highly polished elytra is still brighter and deeper green, the red of the under surface paler, the legs relatively darker throughout; head similar, the antennæ much shorter barely longer than the body, the prothorax similar, except that the coarse punctures are still denser, the median line with a transversely rhombiform flat medial dilation, and that the inner of the subbasal impressions does not curve anteriorly and inwardly; elytra similar but more crumpled and rugose basally and with the inner of the impunctate lines less distinct; punctures of the prosternal patches, the latter similarly separated by a narrow parallel line, as coarse as in *præstans* but still denser, without flat interspaces and more extended posteriorly, entering somewhat between the coxæ; legs more strongly punctured. Length (♂) 31.0 mm.; width 9.0 mm. Mexico (Guerrero),—Baron.

I am unable to determine just what relationship exists between these two forms but it certainly seems to be of a higher order than individual variation. The inner face of the legs is not thickly clothed with ferruginous hair, as is stated of the Guatemalan *iridescens* by White.

Tragidion Serv.

A very well defined genus, represented by numerous species in the temperate regions of North America. The prothorax is larger in the male than in the female and generally clothed with thick erect shaggy pubescence. The species known to me may be defined briefly as follows:

- Elytra corrugated.....2
 Elytra even, not corrugated, each with three very fine, unembossed, thread-like lines, the prothorax in both sexes smaller than usual..7
 2—Prothorax sharply and prominently angulated or spinose at the sides; elytral corrugation strong; antennæ varicolored.....3
 Prothorax less narrowed, fuller at the sides and more rounded anteriorly and with very small lateral tubercles.....4
 3—Body larger and stouter, black, the vestiture of the prothorax and legs with pale bluish reflection; elytra fulvous-red, blackish at the extreme base. Male with the antennæ long and rather stout, the joints, except the first two and last four, red, with swollen black apices, the prothorax across the very acute post-median tubercles as wide as the elytral base; anterior femora excavated at the lower edge of the outer face from base to beyond the middle; punctures of the subglabrous prosternum very coarse; elytra rapidly narrowed from base to apex. Female with antennæ much shorter than the body, stout, broadly compressed, serrate apically, colored as in the male but with the outer five joints black; prothorax with less prominent tubercles and narrower than the elytra, the latter but very feebly narrowed from the base; anterior femora simple, the prosternal punctures very fine and dense, the bluish hairs long and dense. Length (♂, ♀) 28.0–31.0 mm.; width 8.5–9.5 mm. Lower California. [*T. annulatum* Csy., nec Lec.].....**peninsulare** Schæf.
 Body nearly as large, velvety-black, first two joints of the antennæ black, the remaining joints fulvous, with their apices black, the third and fourth joints very densely clothed at tip with black hairs; prothorax strongly angulated at the sides behind the middle; elytra fulvous, broadly black at base; cornuous processes between the antennæ more conspicuous than in *coquus*. Length 27.5 mm. Mexico (Sonora).....**annulatum** Lec.
 Body notably smaller and narrower, nearly as in *peninsulare*, except that the thoracic and crural vestiture is deep black and not bluish and that the elytral base is more extensively black. Female with the antennæ three-fourths as long as the body, rather slender and not broadly flattened, deep black throughout; tibiæ similarly compressed, the legs, however, shorter and less stout; prosternum finely, densely punctate posteriorly, transversely rugulose anteriorly, moderately pubescent; elytra perceptibly narrowed from the base; lateral thoracic tubercles median and not post-median as in the two preceding. Length (♀) 21.0 mm.; width 6.3 mm. New Mexico (Fort Wingate),—Shufeldt. [*fulvipenne* Csy., nec Say].

hirsuticolle n. sp.

- 4—Elytral corrugations sharply marked, strong; antennæ varicolored... 5
 Elytral corrugations obtusely wave-like and feebler; antennæ black throughout in both sexes..... 6
- 5—Body larger and less slender, parallel; under surface and legs deep black, the anterior tibiæ rufescent except basally and apically; head and pronotum feebly rufescent, elytra fulvous-yellow, broadly black at base; antennæ (♂) two-thirds longer than the body, only moderately slender, the basal joint rufescent, black apically, second dark rufous, all the remainder rufous, becoming black at their extreme apices, the eleventh feebly blackish just before the apical prolongation, which is distinctly differentiated though rigidly attached, its apex but feebly arcuate, not enlarged and only minutely tipped with black; prothorax as in *coquus* throughout but with the erect black hairs shorter and less dense; elytra as wide as the prothorax, parallel, conjointly semicircular at apex, but slightly more than twice as long as wide; prosternum with strong, irregular, close-set punctures, much less coarse than in *peninsulare*; abdomen minutely, very densely punctate and subopaque. Length (♂) 20.0 mm.; width 5.8 mm. Arizona (locality unrecorded).

densiventre n. sp.

Body smaller and more slender, the elytra more elongate, piceous-black, the elytra bright fulvous-yellow, black only at the extreme basal margin; antennæ (♂) nearly similar in coloration but shorter and much more slender, a third to nearly one-half longer than the body, the first two joints black, the black apices of the remainder more extensive than in the preceding; prothorax similar but relatively smaller, the vestiture similarly rather short and only moderately dense, the punctures rather less irregular in form and the three discal callous elevations much less distinct; elytra fully as wide as the prothorax, parallel, broadly rounded at apex, nearly three times as long as wide; prosternum less coarsely and more loosely punctate but opaque; abdomen more shining, the very minute punctures well separated and smaller; legs shorter and more slender, the hind tibiæ almost similarly compressed and more so than in any form of *coquus*; legs black or piceous-black throughout. Length (♂) 14.0–16.0 mm.; width 3.8–4.2 mm. Utah (southwestern),—Weidt.

auripenne Csy.

- 6—Hind tibiæ straight; arcuate tip of process of last antennal joint not dilated. Deep velvety-black throughout, the elytra each with a moderate elongate-oval submarginal spot well before the middle, pale orange, the spot sometimes extending across, gradually narrowing to the suture, at least in the female, where it is always more extended than in the male. Male with the antennæ three-fourths longer than the body, slender, the last joint more than one-half as thick as the third, with the apically arcuate appendage very strongly differentiated, apparently forming an additional joint but rigidly connected; prosternum strongly, deeply, irregularly and very densely punctate, opaque; abdominal punctures fine but strong, very dense; pronotal punctures strong, extremely dense and subconfluent. Female rather smaller, with the antennæ slender, as long as the body,

the last joint short, with constricted conical apex, the legs more slender; thoracic punctures above and beneath extremely fine and dense. Length (♂, ♀) 18.0–22.0 mm.; width 4.8–6.1 mm. North Carolina (Southern Pines),—Manee.....**coquus** Linn.

A—Similar but brownish-black, more slender in form, the elytral pale spot always much smaller. Male with the antennæ similar but still more slender, very finely filiform apically, the last joint scarcely one-half as thick as the third, the appendage feebly differentiated; prosternal and pronotal punctures as strong but distinctly separated, the interstices very finely, closely punctate; abdominal punctures finer and less dense. Female much smaller than the male, differing as in the same sex of the preceding. Length (♂, ♀) 16.0–21.0 mm.; width 4.5–5.5 mm. New Mexico (Las Vegas) and Texas.....**filicorne** n. subsp.

B—Similar in size to *coquus* but broader and rather less convex, velvety-black, the elytra fulvous, blackish at the basal margin, generally shaded with a slightly more obscure fulvous or brownish tint outlining much the same extended maculation as in the female of *coquus*; body much stouter and with relatively larger prothorax than in *filicorne*, the antennæ nearly similar, though not so slender; vestiture of the almost similarly very densely punctate pronotum much sparser. Length (♂, ♀) 18.5–24.0 mm.; width 5.5–7.2 mm. Texas.....**fulvipenne** Say

C—Smaller and much more slender than the preceding, with notably shorter and very much more slender legs and more slender tarsi, similarly colored and sculptured, except that the pale fulvous-yellow elytra have each a brown cloud, truncate before the middle, where it extends almost to the suture, thence receding posteriorly but attaining the suture at apex; antennæ very slender but rather shorter, the outer joints especially more abbreviated. Length (♂) 16.5 mm.; width 4.4 mm. Texas.....**nubifer** n. subsp.

D—Still smaller, slender, parallel, colored and sculptured throughout nearly as in *fulvipenne*; antennæ as in *nubifer*; legs still shorter, slender, the tarsi notably shorter than in any of the preceding, the posterior scarcely more than half as long as the tibiæ; elytra much shorter than in *nubifer*, but little more than twice as long as wide. Length (♂) 14.8 mm.; width 4.0 mm. New Mexico (Las Vegas).

levipes n. subsp.

Hind tibiæ inwardly bent toward tip; appendage of last antennal joint in the male more arcuate than usual, with the tip gradually swollen or subbulbiform. Body larger and stouter than in *coquus* or any of the subordinate forms, the corneous processes between the antennæ more developed and the tarsi somewhat longer and stouter, dull smoky-black throughout, the elytra each with a very minute point of orange tint near the margin behind basal fourth; general form and sculpture as in *coquus*, the vestiture shorter, thinner and much less conspicuous; legs longer; prosternal punctures (♂) as in the preceding forms, the antennæ as in *coquus* but still more elongate and with longer basal joint. Length (♂) 26.5 mm.; width 7.3 mm. Texas.....**apicatum** n. sp.

- 7—Broader, more oblong, deep velvety-black, the elytra wholly pale fulvous-orange; prosternum differing sexually as in the preceding species, the pronotum however similarly minutely, densely punctured in both sexes; lateral spine but little behind the middle, stronger and more abruptly formed than in the *coquus* group but less developed and less triangular than in the *annulatum* group; elytra much wider than the prothorax in both sexes, only twice as long as wide, parallel, broadly rounded at apex; legs long, the tarsi more dilated than in any of the preceding; abdomen minutely, extremely densely punctate; antennæ varicolored in both sexes, slender, black distally. Length (♂, ♀) 24.0–27.0 mm.; width 7.4–8.2 mm. **armatum** Lec.

The remarks of Mr. Charles Schaeffer (Bull. Bk. Inst., I, p. 339) leave me in somewhat dubious frame of mind as to what *annulatum* Lec., may really be. I had not consulted LeConte's original description before publishing the tabular statement of the genus (Ann. N. Y. Acad., VII, 1893, p. 586) and trusted for the identification of the species entirely to the comparison which I had made with the specimens standing under that name in the LeConte cabinet, which so far as can be recalled included the Lower California form which I described as *annulatum*; this was also the interpretation of *annulatum* apparently held by Lacordaire (Gen. Col., IX, i, p. 174). It is the largest and most conspicuous species of the genus, but as I now perceive, agrees with the original description of *annulatum* simply in the very prominent lateral angles of the prothorax placed far behind the middle and in the coloration of the male antennæ.

It seems probable, in this light, that the Fort Wingate female with very prominent but almost perfectly median lateral thoracic angles, which served to represent *fulvipenne* Say, in my sketch of the genus, principally because of its entirely black antennæ, is a different species, more closely allied to *annulatum* than to *fulvipenne*, the latter doubtless being the well known pale variety of *coquus*. Mr. Schaeffer states, with ample series at hand, that the male antennæ of *annulatum*, of which I insert above the original description, are varicolored throughout as described by LeConte, while those of the female are much less so and may be wholly black, truly a rather remarkable circumstance in view of the virtually similar coloration of the male and female antennæ of *peninsulare*, although there is always somewhat more black in the female than the male antennæ. *Peninsulare* is announced as a variety of *annulatum* by Mr. Schaeffer, but seems to differ greatly in the female antennæ;

at any rate they are both widely different from *hirsuticolle* in position of the thoracic angulation at the sides and in the very much more slender antennæ of the latter, irrespective of coloration.

Under my description of *auripenne* (l. c.), I confused two distinct though allied species as defined above. The true *auripenne* is a small and slender, delicate species, with minute and inconspicuous lateral thoracic tubercles and inhabits only southwestern Utah so far as known. The other, named *densiventre* in the above statement, and from Arizona, is materially larger, stouter and with much longer and thicker legs, but not so large as *annulatum*, although agreeing in the antennæ; it also has small thoracic tubercles as in *coquus*, which could in no way answer to LeConte's description of *annulatum*. That either of these species could be the true *annulatum*, as definitely stated by Mr. Schaeffer, is therefore wholly inadmissible.

Purpuricenus Serv.

The following species seems certainly more appropriately placed in *Purpuricenus* than in *Metaleptus*, the latter as represented by such forms as *angulatus* and *batesi*, being of distinctly different facies. In describing *batesi* it is singular that Dr. Horn did not draw attention to the remarkable sexual differences, the male being much more slender than the female, the elytra gradually and arcuately narrowing from slightly behind the middle, and not abruptly broadly rounded at apex, and the prothorax less transverse and more parallel; in the female it is very rapidly narrowed anteriorly before the tubercles, giving a totally different habitus.

***Purpuricenus lecontei** n. sp.—Subcylindric, convex, deep opaque black and everywhere very finely, densely but not deeply punctate and with very short, fine, inconspicuous hairs, more distinct on the under surface and erect and bristling on the flanks of the prothorax; elytra throughout bright and pure scarlet, with a dense opaque velvety lustre and finely, not densely punctate, with three feebly marked discal lines on each, not attaining the apex; head finely, densely punctured and opaque, clothed with pale erect pile, the antennal tubercles not elevated as they are in *humeralis*; antennæ very slender, not as long as the body, with rather stout basal joint, the third two-fifths longer than the fourth, four to seven decreasing just perceptibly, the remainder missing in the type; prothorax three-fifths wider than long, the apex two-thirds as wide as the base; sides angulate and acutely tuberculate just behind the middle, thence converging and nearly straight to base and apex; surface opaque, subglabrous, the fine and feeble punctures parted along the median line;

*Ischnocnemis

I can discover little or no difference between *Entomosterna* and *Ischnocnemis*, except the single character selected above to distinguish them; this will probably serve however, as the presence, absence or disposition of the ivory vittæ of the elytra is of greater importance generically than has apparently been admitted. *Cyphosterna* Chev., is another Mexican genus closely allied to *Ischnocnemis*, but having the prothorax transverse and finely tuberculate at each side; it also has two ivory vittæ on each elytron.

Parabatyle (n. gen.) seems to be necessary for the type cited above. Bates thought it might go in *Batyle* or else, because of the longer antennæ, be made the type of a distinct genus; I have adopted the latter suggestion.

Batyle Thoms.

This genus was placed very far from *Ischnocnemis* in the arrangement of Lacordaire, but the position assigned it in this neighborhood by LeConte, Bates and others seems to be far more rational; our species as hitherto considered form two genera, defined above from the form of the scutellum, scheme of ornamentation, sculpture and vestiture. The species of *Batyle*, as here limited, may be known as follows; the coloration—black with the prothorax bright red throughout—is similar in all:

Elytral punctures becoming widely separated and much coarser basally. . . 2
 Elytral punctures dense throughout, only very little larger basally; body stouter. 4
 2—Prothorax widest near the base, the sides rapidly rounding to the latter, gradually feebly converging and feebly, subevenly arcuate thence to the apex, which is much narrower than the base; surface strongly polished, the under surface deep black throughout, only the inflexed sides of the pronotum red; antennæ (♂) slender, about as long as the body, the third joint a third longer than the fourth, which is barely visibly shorter than the fifth, the last distinctly longer than the tenth, with a short and feeble prolongation; prothorax but slightly wider than long, with the usual long erect bristling hairs, the punctures strong and only moderately sparse; scutellum transversely parabolic; elytra two and one-half times as long as wide, a little wider than the prothorax, gradually subprominent at the sides basally, the punctures everywhere strong and rather well separated, decidedly coarse and distant basally, the surface transversely rugulose near the apex; hind thighs extending distinctly behind the elytra, the legs slender. Length (♂) 8.9 mm.; width 2.4 mm. New Mexico (Jemez Springs),—Woodgate.

seclusa n. sp.

- Prothorax subparallel, widest at about the middle, the sides very evenly and strongly rounded throughout; under surface black throughout, except the inflexed sides of the prothorax (♂), or excepting the entire prosternum before the coxæ (♀).....3
- 3—Elytral punctures very dense and rather fine posteriorly, moderately coarse and separated anteriorly, the pronotal punctures moderate or rather small, sparse; color deep black, shining throughout, the prothorax red above and beneath, with only the coxæ, sternal process and margins of the acetabula black; antennæ (♂) as long as the body, nearly as in the preceding, very slender, or (♀) nearly three-fourths as long as the body; prothorax more than two-fifths wider than long, the apex much narrower than the base; surface even; elytra a little less than two and one-half times as long as wide, the humeri rather prominent; black area of prosternum (♂) opaque and strongly punctate, red and nearly smooth (♀). Length (♂, ♀) 11.0–12.0 mm.; width 3.0–3.2 mm. Montana to Texas; [*sanguinicornis* Germ.].....*ignicollis* Say
- Elytral punctures everywhere notably coarse, still larger basally; coloration as in *ignicollis*, the under surface more piceous in the type; body much smaller; antennæ (♀) dark piceo-rufous, slender, about two-thirds as long as the body, nearly as in *ignicollis* but a little shorter, the third joint barely more than three times as long as wide, the tenth but very little longer than wide; prothorax nearly as in *ignicollis* but less narrowed apically and with much coarser and less numerous punctures, the erect hairs sparser; scutellum triangular, wider than long, not very acute; elytra similar but shorter, only slightly more than twice as long as wide; basal joint of the hind tarsi a little shorter, not quite as long as the remainder. Length (♀) 8.0 mm.; width 2.2 mm. New Mexico (locality unrecorded).
punctipennis n. sp.
- 4—Colors and sexual characters as in *ignicollis*, except that the black and strongly punctate area of the male prosternum extends further upward anteriorly, so as to appear slightly on the upper surface at the anterior angles; antennæ (♂) similar, though a little shorter and stouter throughout; prothorax nearly similar, being slightly more transverse and rather more narrowed anteriorly, with the punctures coarser and more numerous, the erect hairs paler; elytra less parallel, slightly narrowed from base to apex, more elongate, less evidently wider than the prothorax; legs longer, the hind femora extending well beyond the elytra. Length (♂, ♀) 12.0–13.0 mm.; width 3.2–3.9 mm. New Mexico (Jemez Springs)...*acomana* n. sp.
- Colors and other general characters as in the preceding but shorter and with the elytra parallel, not subcuneiform; antennæ (♀) still shorter than in *acomana*, but little more than half as long as the body; prothorax similar but still more narrowed at apex, with still coarser punctures and less numerous erect hairs, the apex scarcely more than two-thirds as wide as the base; elytra more evidently wider than the prothorax and distinctly shorter, only a little more than twice as long as wide, perfectly parallel, very broadly rounded at apex; legs similarly much longer than in *ignicollis*, the hind femora extending

beyond the elytra even in the female. Length (♀) 12.0 mm.; width 3.7 mm. Utah (Southwestern),—Weidt.... *oblonga* n. sp.

Dr. G. H. Horn published (Tr. Am. Ent. Soc., VII, p. 41) a few remarks concerning the synonymy of *Batyle* in its comprehensive scope, but they are apparently based upon a very hasty and superficial survey. This is indicated at least by the assignment of *Eriphus coccineicollis* Hald., as a synonym of *ignicollis*; it is in no way related to *Batyle* but is a synonym of *Phymatodes amœnus* Say. The synonymy given under *Batyle suturalis* is erroneous, except in the case of *miniatum* Germ., and therefore cannot be adopted.

Batyleoma n. gen.

The species of this genus have a different facies from those of *Batyle*, due to their peculiar scheme of ornamentation, sculpture and vestiture; they are moderately numerous. The type is the *Callidium suturale* of Say (*miniatum* Germ.), rather abundant from Pennsylvania westward and southward to Iowa and Mississippi. In a large series at hand there is only one example having the black sutural vitta described by Say, the upper surface being red throughout normally. From the upper Missouri Valley to Colorado occurs another form, allied to *suturalis* but somewhat larger on the average, more elongate, rather more convex and invariably having a deep black sutural vitta beginning at about basal fourth or fifth and often greatly expanded at apex to the margins, sometimes in nearly apical half of the elytra; this was described under the name *Eriphus pearsalli* by Bland (Pr. Ent. Soc. Phila., 1862, p. 6) and is a perfectly valid species, as shown by the large series before me from Colorado, kindly communicated by Mr. Frost. *Rutilans* Lec., (Journ. Acad. Phila., ser. 2, II, p. 18) from Santa Fé, New Mexico, might at first glance be thought to be the same as *pearsalli*, but we infer from the description that the elytra are black only behind the middle. This never occurs in *pearsalli*, for the vitta in that species is never abbreviated anteriorly; it is virtually certain therefore that *rutilans* Lec., is also a distinct species.

Ruber Lec., (*Eriphus*?,—Pr. Acad. Phila., 1858, p. 82) and *cylindrella* Csy., (*Batyle*,—Ann. N. Y. Acad. Sci., VII, p. 587) are more elongate and cylindric species, with longer legs and form a feebly demarcated separate group of the genus, in which the elytra appar-

ently never have a trace of black sutural ornamentation; the latter species is isolated because of the pallid vestiture, this being invariably black or infusate in all the others.

The following is allied to *suturalis* but is stouter in form:

Batyleoma fontinalis n. sp.—Form nearly as in *suturalis* but a little stouter, similarly punctate and with erect black hairs, except that the elytral punctures gradually become sensibly closer as well as smaller apically; color pale yellowish-red throughout above, only the scutellum black, the sutural beading of the elytra infusate; antennæ wholly black; under surface red, all the sterna of the hind body and the anterior coxæ and contiguous surface of the prosternum black; femora red, blackish at tip, the posterior almost in apical half; tibiæ wholly black on the posterior to red tipped with blackish on the anterior; tarsi black, piceous distally. Length (♀) 8.0 mm.; width 2.4 mm. New Mexico (Las Vegas).

The steep front before the line of the antennæ is even more sharply and deeply, transversely concave than in *suturalis*.

The prosternal sexual characters of the male are not quite so pronounced as in *Batyle* and do not involve a difference of coloration; in some forms such as *suturalis*, the male prosternum has an indefinite ante-coxal area more coarsely but not very densely punctate; in *cylindrella* this area becomes larger, more sharply limited and more densely sculptured.

Stenobatyle n. gen.

Body very elongate, generally black, with red prothorax; head small, the front concavely declivous; eyes moderately separated; antennæ very slender, approximately equal in length to the body (♂), the third joint very much longer than the fourth; prothorax variable in sculpture, without erect hairs; scutellum subequilateral but very acute at apex; elytra a little wider than the prothorax, strongly punctured, the ridge at about inner third; anterior coxæ separated; mesosternum slightly swollen, convex, declivous anteriorly, more prominent than the metasternum; legs long and slender; hind tarsi very long.

It will be noted that these characters agree tolerably well with *Entomosterna*, as limited above, but the antennæ differ in the relatively short fourth joint and the elytral ridge is not ivory-like. The two species known to me may be thus described:

***Stenobatyle prolixa** Bates—Deep black, subalutaceous, the prothorax

red, opaque; vestiture above very short, sparse and inconspicuous; head finely, closely punctate; antennæ (♂) distinctly longer than the body, the basal joint obconic, the third nearly one-half longer than the fourth, five to ten subequal in length to the third, the eleventh longer than the tenth, with a feebly marked elongate appendage; prothorax apparently a little longer than wide, widest and slightly inflated near basal third, thence strongly narrowed with less arcuate sides to the apex, which is less than three-fifths the maximum width; basal angles much everted, slender and very acute; surface velvety, minutely, sparsely and obscurely punctulate, the median line gradually elevated and prominent from slightly before to well behind the middle; elytra a little wider than the prothorax, three times as long as wide, the sides feebly converging from the base, the apices rectilinearly truncate, with the external angle prominent and subspiniiform; surface strongly, rather closely punctate, sparsely near the suture basally, the ridge low and feeble, impunctate, the surface linearly subprominent also more externally; sides of the body beneath minutely, densely punctate and silvery-pubescent, more coarsely, very sparsely so and glabrous medially; abdominal segments two to four gradually slightly shorter, the first and fifth longer. Length (♂) 15.7 mm.; width 3.8 mm. Mexico (Guerrero),—Baron. [*Entomosterna prolixa* Bates,—Tr. Ent. Soc. Lond., 1892, p. 180].

Distinguishable from the next by the feebler sculpture and costulation, larger size and immaculate prothorax; the red color of the prothorax extends entirely across the prosternum before the coxæ.

****Stenobatyle cribrata*** n. sp.—Much smaller, more parallel and shining, subsimilar in coloration and vestiture, except that the red prothorax has a parallel black vitta from near the apex to the black basal margin, and that the red does not extend at all to the under surface; head very small, densely, rugosely sculptured; antennæ (♂) but slightly longer than the body, the third joint nearly twice as long as the fourth, five to ten equal but evidently shorter than the third, eleventh but slightly longer than the tenth, not evidently appendiculate; prothorax slightly elongate, not inflated, the sides very feebly converging, evenly and moderately arcuate from base to apex, the latter scarcely three-fifths the maximum width; basal angles but slightly produced obliquely though very acute; surface even, not tumid medially, coarsely, densely punctate, the punctures transversely confluent laterally; scutellum much smaller, less acute; elytra barely at all wider than the prothorax, a little shorter, more depressed, more coarsely, very densely punctate throughout, the ridge strongly and sharply elevated, smooth, the surface just exterior to the ridge feebly concave; lateral apical angles obtuse but distinct, not in the least dentiform; under surface and legs nearly similar, except that the dense punctures toward the sides of the body are less fine and the pubescence less evident. Length (♂) 10.5 mm.; width 2.4 mm. Mexico (Guerrero),—Baron.

Differs from *prolixa* as above noted and also in the less produced basal thoracic angles, smaller scutellum, still shorter fourth antennal joint and coarser sculpture of the under surface.

Ischnocnemis Thoms., is not represented in my cabinet; it has for its type a rather large Mexican species, *tripunctata* Thoms. (*costipennis* Dej., MS.); it is black, obscure above, the abdomen tawny-testaceous, the elytra densely punctate and having, between the two costæ, a broad brown vitta not attaining the apex. The genus *Ischnocnemis* was evidently misunderstood by LeConte and Horn (Class., p. 301), as the mesosternum is said to be protuberant; this error was noticed also by Bates.

Entomosterna Chev.

As limited above to those species agreeing in general with the formula of Lacordaire, but having only one vitta, pale, or apparently sometimes as in *cyaneus* Bates, not pale, on each elytron, this genus will comprise among others *Ischnocnemis cærulescens* Bates, as well as the following:

***Entomosterna unicastata** n. sp.—Deep black throughout, opaculate, the vestiture above very short and indistinct, silvery white and dense toward the sides of the body beneath; head and pronotum opaque, not very coarsely but extremely densely punctate throughout, the latter with a short smooth and narrow, slightly elevated median line behind the middle; antennæ (♂) a little longer than the body, slender, slightly compressed and sub serrate distally, the third joint two-fifths longer than the fourth; prothorax fully as long as wide, slightly wider behind the middle than at base but with the sides very evenly and moderately arcuate, more converging anteriorly, the apex two-thirds the maximum width; basal angles, formed by the cariniform prolongation of the basal bead, lapping the elytral humeri; scutellum triangular, as wide as long, sometimes concave, acute at apex but not prolonged; elytra cuneiform, slightly wider than the sides of the prothorax, two and one-half times as long as wide, strongly, very densely punctate, even, excepting the large polished and very strong ivory costa at inner third; apices sinuato-truncate, the external angle acute but not spiniform. Length (♂) 11.7–12.7 mm.; width 2.8–3.4 mm. Mexico (Guerrero),—Baron.

To be distinguished very readily from *cærulescens* by the dull black surface, very strong elytral costa and other characters. The abdomen and sterna conform to *Stenobatyle* as described above.

The genera of the following group differ very much from the preceding—though often closely resembling certain of them in the ivory elytral vittæ—in the horizontal, sharply limited and anteriorly perpendicular mesosternum and shorter hind tarsi. *Plionoma* has much the same position in the group that *Batyle* and other genera with evenly convex elytra have in the preceding group:

- Elytra without costæ. 2
 Elytra each with two pale costæ. 3
 2—Antennæ very stout basally (♂) or throughout (♀), abruptly slender and strongly carinate beginning with the sixth joint in the former sex, much compressed, more pubescent and simple in the latter; elytra each with a discal densely pubescent vitta; body large. [Type *S. trilineatus* Dup.]. Mexico. ***Sphænothecus**
 Antennæ very slender throughout, filiform and non-carinate (♂), or shorter and but little stouter (♀); prothorax subconical, inflated well behind the middle; elytra wholly devoid of pubescent discal vitta, the apices bisinuato-truncate, the external angle sharply spiniform; body much smaller. [Type *Sphænothecus suturalis* Lec.]. Sonoran. **Plionoma**
 3—Prothorax and antennæ is in *Plionoma*; hind body more cuneiform; scutellum not regularly elongate-triangular and densely pubescent as in that genus, but sinuate at the sides or acutely produced at tip and nearly nude. [Type *Sphænothecus bivittatus* Dup.]. Texas. **Taranomis**
 Prothorax and antennæ nearly as in *Plionoma*, the former inflated less posteriorly, narrowed apically and with long erect flying hairs; elytra broadly arcuate and unmodified at apex; mesosternum less acutely transverse at the summit of the declivity; scutellum densely pubescent, very acute; body beneath and legs with long flying hairs. [Type *P. vittatus* Lec.]. Southern California. **Perarthrus**
 Prothorax not conoidal but parallel, broadly angulate medially or sometimes tuberculate at the sides. 4
 4—Antennæ as in the preceding, very slender, non-carinate in the male; scutellum acicularly produced at tip, nearly nude; elytral apices bisinuously truncate, generally feebly bispinulose; second ventral segment longer than the third; prothorax simply obtusely angulate at the sides, without erect hairs. [Type *Sphænothecus cyanicollis* Dup.]. Mexico. ***Lophalia**
 Antennæ gradually very stout basally, hirsute with short erect black vestiture; scutellum nearly similar, not densely pubescent; prothorax acutely tuberculate at the middle laterally, hirsute with erect black pubescence; elytra similarly subcuneiform, with the apices similar; second and fourth ventrals subequal and just visibly longer than the third; lateral carina of the elytra not attaining the humeri. [Type *Z. spissicornis* n. sp.]. Ecuador. ***Zalophia**

The last of these might seem to be allied to *Eriphus*, because of the thoracic tubercles, but the prothorax is transverse, the elytral tips bisinuously truncate, the legs short, with the femora all slender, the posterior coming very far from attaining the elytral apices and the hind tarsi are short and rather thick, with the first joint barely as long as the next two.

Sphænothecus Dup., seems to be properly represented only by *tomentosus* and *trilineatus* of Dupont; *bivittatus*, included by Lacor-

daire, should be excluded and is made the type of the genus *Taranomis* as stated above.

Plionoma n. gen.

Besides *suturalis* Lec. (*Sphenothecus*) and *S. rubens* Csy., the latter being a distinct species and not a variety of *suturalis*, we have another definable as follows:

Plionoma degener n. sp.—Smaller and narrower than *rubens*, shining, piceous-black, the prothorax bright red; under surface deep black, the prosternum transversely rufescent; femora red, the tibiae and tarsi throughout black or nearly so; pubescence pale, short and sparse above, dense beneath except medially, sparse on the prosternum; head small; antennæ (♀) black, about as long as the body, the third joint fully a fourth longer than fourth to seventh, which are subequal, seven to ten gradually decreasing, the last much shorter than the tenth; prothorax nearly as in *rubens* in form and sculpture but, like the head, much less pubescent; scutellum much narrower, twice as long as wide; elytra nearly similar, coarsely, sparsely punctate, the punctures similarly smaller and closer in a broad sublateral line but scarcely intermixed with smaller punctures, the pale sutural line similar; under surface nearly similar but much less pubescent. Length (♀) 10.5 mm.; width 3.0 mm. Arizona (southeastern),—Dunn.

Allied to *rubens* but differing in its smaller size, sparser pubescence, especially on the head and prothorax above and beneath, in its dark coloration, narrow scutellum and especially in having the hind tibiae almost unmodified; in *rubens* they are slightly incurvate and much more notably thickened apically than in *degener*. The hind femora are more evidently bispinulose at tip than in either of the other species.

Taranomis n. gen.

The type, named above, is the only species of this genus known to me. The conoidal bivittate prothorax is nearly as in *Sphenothecus*, but the elytra are wholly different in structure. It seems to be a local development and confined to Texas and adjoining regions. Besides *bivittata* Dup., this genus may possibly include the *Ischnocnemis pallida* of Schaeffer, from Lower California, but the probabilities are that it is not strictly congeneric.

Perarthrus Lec., is represented also by a single species, likewise a local development and confined to the seacoast regions of southern California. My single representative is much smaller than the single original male type, being only 8.2 mm. in length; it is a fe-

male, deep black throughout, except the ivory vittæ, and very coarsely, closely cribrate above, more coarsely on the pronotum than on the elytra.

Lophalia n. gen.

In the typical forms, represented in my collection at present by a pair of *Sphenothecus quadrivittatus* Bates, closely allied to *cyanicollis*, the male is larger and has longer, more cuneiform elytra than the female. In the following species this sexual difference is still more accentuated:

***Lophalia cribricollis** Bates—Male elongate, deep black throughout, except the ivory vittæ, which expand slightly beyond the carina, especially at base; pubescence everywhere extremely short and sparse, rather close toward the sides of the abdomen and on the met-episterna but not conspicuously; head densely punctate, the cleft between the broad antennal tubercles abrupt and deep; antennæ one-half longer than the body, the third joint but little longer than four to ten, which are equal, the eleventh sensibly longer, feebly appendiculate; prothorax fully a fourth wider than long, the truncate apex but little narrower than the base, the sides very obtusely subprominent just behind the middle; surface very broadly flattened medially, becoming slightly concave basally, not coarsely, deeply, very densely punctate, the median line slightly impunctate anteriorly; elytra at base distinctly wider than the prothorax, cuneiform, nearly three times as long as wide, rather coarsely, very deeply and closely punctate but not densely, the line between the two vittæ somewhat swollen and impunctate along the middle; fifth ventral truncate, but little longer than the fourth; prosternum densely punctate; legs rather short, the hind femora far from attaining the elytral tips. Length 16.5 mm.; width 4.2 mm. Mexico (Guerrero),—Baron. (*Sphenothecus cribricollis* Bates,—Tr. Ent. Soc. Lond., 1892, p. 179).

The specimen that I assume to be a female of *cribricollis*, is very much smaller, 11.5 mm. in length, parallel, with smaller head, slightly shorter elytra and antennæ about as long as the body, with the third joint much longer than the fourth, the latter shorter than five to eleven, which are of equal length; the coloration and sculpture are exactly similar throughout.

Zalophia n. gen.

This genus is evidently allied to the preceding, but the sides of the prothorax, instead of being broadly angulate or feebly tumescent submedially, have a small but abrupt median tubercle; besides this, the dense erect bristling pubescence of the prothorax and antennæ, the latter being gradually much thickened toward base, serves to

distinguish the two very readily. The type may be outlined as follows:

***Zalophia spissicornis** n. sp.—Rather stout, moderately convex, deep black throughout, excepting the entire inner costa and the narrower outer costa to a little before the middle, scarcely at all shining, the pubescence above everywhere close, long on the prothorax above and beneath, very short on the elytra, deep black throughout; on the under surface of the hind body it is sparse, the latter polished, the punctures becoming fine and dense only at the extreme sides; head very densely, finely sculptured, with a fine tumescent smooth line at base only; antennæ (σ^7) about a fourth longer than the body, feebly tapering and flattened distally, the third joint nearly a fourth longer than the fourth, which is a little shorter than the equal five to nine, tenth very little shorter but rather abruptly narrower, the eleventh but little longer, the appendage short and scarcely traceable; prothorax two-fifths wider than long, the truncate apex but little narrower than the base, minutely, deeply constricted at the margin; sides broadly subangulate to the tubercle, the surface rather finely, extremely densely punctate, with a very fine and tumescent but not impunctate median line in more than apical half, circularly concave at the middle basally; scutellum very acute, much longer than wide, punctate, but not densely pubescent; elytra cuneiform, at base much wider than the prothorax, two and one-half times as long as wide, rather finely, very densely punctate, the inner ridge notably large, smooth and strong; fifth ventral sinuate medially at apex. Length 14.5 mm.; width 4.2 mm. Ecuador (Babahoyo—at foot of Andes).

Recognizable by the dull and intensely black integuments, bristling black pubescence, very large and entire inner elytral ridge and other characters as related above.

Crossidius Lec.

This genus is a very large one and the species are generally well differentiated. Numerous forms still unpublished exist in all the larger collections; the following comprise about all the non-descripts that are before me at present:

Crossidius plagiatus n. sp.—General form and coloration as in *punctatus* but a little larger and stouter, the two fine impunctate lines disappearing apically on each elytron more evident; antennæ (σ^7) more distinctly longer than the body, otherwise nearly similar; prothorax much less transverse and not so densely or conspicuously pubescent; elytra nearly similar in form and sculpture but with the black sutural marking different, not elongate-fusiform and narrowed before and behind as in *punctatus* (σ^7), but parallel and straight at the sides, obtusely, angularly produced along the suture anteriorly, rounded behind, the suture narrowly black to the apices; abdomen much less densely punctate and pubescent, the segments black, finely pale at their apices, the last two

entirely pale. Length (♂) 16.5 mm.; width 5.3 mm. Unlabeled in the Levette collection.

Very different from *punctatus* in the sparser pubescence of the prothorax and under surface, longer and rather heavier antennæ, less transverse prothorax and different form of the elytral black marking. The female is more heavily marked with black and with the black elytral patch more angulate anteriorly than the male in this part of the genus, though apparently not so in the *pulchellus* or *discoideus* sections.

The following species is allied to *testaceus* Lec., differing in its much finer sculpture:

Crossidius maculicollis n. sp.—Oblong-elongate, moderately convex, scarcely shining and densely clothed with short stiff flavescent hairs, more erect, longer and bristling anteriorly, pale testaceous in color, the head black, the pronotum with four large blackish cloud-like spots involving the convexities, the elytra wholly immaculate; under surface infusate and with longer dense coarse pubescence; antennæ (♂) blackish, piceous distally, slender, about as long as the body, or (♀) much stouter, blacker and barely extending behind the middle of the body; prothorax coarsely, densely and clearly punctate, less coarsely and more irregularly in the male, the sides feebly tuberculate behind the middle, more strongly in the male; elytra slightly wider than the prothorax and two and one-half times as long as wide, subparallel, the apices evenly rounded to the obtuse sutural angles; surface with rather small but very deep and dense punctures, becoming larger and separated near the base, the discal thread-like lines very feeble. Length (♂, ♀) 12.8–15.0 mm., width 4.0–4.8 mm. California (Los Angeles Co.).

Differs from *testaceus*, not only in the very much less coarse and extremely dense elytral sculpture, but in the subobsolete discal raised threads, which are very strong in the latter; it also differs in its shorter and darker male antennæ and in the distinctly demarcated four black thoracic spots. *Testaceus* is from San Diego.

The two following species are allied to *crassipes*, and in the same way, have the second joint of the middle tarsi distinctly wider than long:

Crossidius wickhami n. sp.—Form and coloration nearly as in *crassipes* but a little shorter; head and prothorax deep black; antennæ (♂) slightly longer than the body, of the usual structure; prothorax nearly three-fifths wider than long, coarsely, densely punctured and with bristling, rather abundant but not dense erect pale hairs, and an acute lateral tubercle well behind the middle; elytra but slightly more than twice as long as wide, the black sutural area narrow, fusoid, scarcely extending in front of the middle, the punctures everywhere rather fine and extremely

dense, less fine basally than apically, the apices broadly, evenly rounded; two fine lines on each unusually distinct to the apical declivity; abdomen black, gradually rufous behind, finely, very densely punctured and with long dense pale hairs. Length (σ^7) 13.0 mm.; width 4.4 mm. Utah (Marysvale),—Wickham.

Distinguishable by the very dense elytral sculpture, denser and much less coarse than in any other species. It is dedicated to Prof. H. F. Wickham in recognition of many interesting discoveries.

Crossidius truncatellus n. sp.—Still shorter in form than the preceding, similar in coloration, the pale vestiture less dense; antennæ (σ^7) longer and more slender, almost a third longer than the body; prothorax less transverse, barely one-half wider than long, the sides parallel and evenly rounded, not evidently tuberculate, coarsely but not so densely punctate, the punctures nearly isolated; elytra not quite twice as long as wide, dehiscent at apex, the apices rectilinearly truncate, the outer angle obtuse; punctures irregular, everywhere dense and differing but little antero-posteriorly but coarser than in *wickhami* throughout, the black sutural area similar but more extended; abdomen bright red, black only at the extreme base. Length (σ^7) 11.5 mm.; width 4.0 mm. Utah (Marysvale),—Wickham.

Differs from *wickhami* in its shorter form, less transverse and non-tuberculate prothorax, longer and more slender antennæ, truncate elytral apices and redder abdomen.

Allied to *pulchellus* Lec., there are many forms differing in special characters, but the general mutual resemblance is so striking that I will designate them all subspecies of *pulchellus* for the present; their peculiarities can best be compared in the form of a table as follows:

Body parallel, black, the abdomen rufous at apex, the elytra tawny yellow, black at the basal margin, the black area posteriorly extended slightly at the humeri, also with a large common parallel-sided black area, not extending to the sides, broadly involving the apices, extending to basal third, where it is abruptly and angularly contracted, the median part extending anteriorly along the suture for a short distance in an acute triangle; thoracic punctures very coarse, not crowded, having moderate cinereous hairs; antennæ a little longer than the body (σ^7) or three-fourths as long as the latter (φ); female smaller than the male but similarly maculate.

pulchellus Lec.

A—Similar in form and size to *pulchellus* and similarly maculate, except that the anteriorly projecting angle of the black area extends narrowly along the suture to the base and that the posterior part retreats slightly from the lateral edge to the apex, this oblique part deeply sinuate; it also differs in having the median line of the pronotum tumid and impunctate for a short distance behind

the middle. Length (♂) 11.0 mm.; width 3.0 mm. Without indication of locality in the Levette collection. *sinuosus* n. subsp.

- B—Similar to the preceding but broader, without trace of the tumid median thoracic spot, the black area of the elytra similar, except that the abrupt angular contraction begins only a little before the middle of the length, the acute angular prolongation extending only to basal fourth. Length (♂) 11.3 mm.; width 3.4 mm. Kansas. *retractus* n. subsp.

- C—Nearly similar in form but with shorter elytra, these being scarcely more than twice as long as wide, the prothorax as in *pulchellus* and the two preceding, except that the hairs, as also those of the head, are longer, coarser and of a fulvous color; antennæ and black area of the elytra as in typical *pulchellus*. Length (♂) 10.8 mm.; width 3.2 mm. New Mexico (Las Vegas).

vegasensis n. subsp.

My two representatives of *pulchellus*, described above, are from Kansas and New Mexico and may not be exactly the same as the Bitter Root Valley, Montana, types of LeConte; they however fill the short description exactly.

The two following, while allied to *pulchellus*, are certainly distinct specifically:

Crossidius debilis n. sp.—Similar to *pulchellus* throughout in coloration and marking and in the thoracic vestiture, but more slender, the antennæ very slender and not longer than the body, the prothorax less transverse, more globular, but little wider than long and with the acicular lateral extensions of the basal margin much longer and more conspicuous, extending as far laterally as does the arcuate median part. Length (♂) 9.0 mm.; width 2.6 mm. Kansas.

The very slender and shorter antennæ, similar in structure but with all the joints shorter, the less transverse prothorax, with very prominent extensions of the basal margin and the more slender form of the body, will serve to distinguish this species from *pulchellus*.

Crossidius lanaticollis n. sp.—Coloration of the body and vestiture as in *pulchellus*, except that the form is more slender, the antennæ (♀) longer, only a fifth shorter than the body, the prothorax similar in form but with the punctures less coarse and much denser, the hairs very much longer, dense and very conspicuous, concealing the sculpture; elytra with the base more extensively black, the discal spot similarly parallel but more extended, separated from the basal black area by a narrow transverse sinuous line, its anterior prolongation not angular on the suture but bilobed at tip, its posterior margin retreating from the elytral edge, then abruptly parallel with the suture to the apex, which is less broadly involved than in *pulchellus*. Length (♀) 10.0 mm.; width 2.8 mm. Unlabeled in the Levette collection.

There are a number of characters distinguishing this species from *pulchellus*, of which the pronotal sculpture and vestiture and form of the elytral maculation are the most important.

The forms allied to *discoideus* Say, differ from the preceding in having the prothorax and elytra bright scarlet in color, instead of tawny-yellow, and in having the large elytral black area, which is somewhat similar in form, more extended, always prolonged along the suture to the black base and in being more expanded behind to the actual edge of the elytra. *Discoideus* Say, from the Mississippi territory, has no black maculation on the prothorax; it was described subsequently by Bland under the name *pulchrrior*, and *blandi* Csy., is an allied though smaller and much more slender species from Utah. The following is frequently misidentified as *discoideus*:

Crossidius sayi n. sp.—Elongate, subparallel, moderately convex; head black; antennæ evidently longer than the body (σ^7) or very much shorter (φ), nearly as in *pulchellus*, except that the last joint is not so elongate and is more obtuse at tip; prothorax one-half wider than long, subparallel and rounded at the sides, bright red, with two large black spots before the middle, which are generally prolonged obliquely forward, uniting with the black apical margin near the middle point, the basal margin also black; punctures narrowly separated, coarse (φ) or somewhat small but deeper (σ^7), the erect pale hairs fine, not obscuring the surface; scutellum triangular, acute, densely and pallidly pubescent; elytra distinctly wider than the prothorax, obtusely rounded at tip, slightly longer in the male, parallel, coarsely, deeply and closely punctate, much less coarsely but still strongly toward apex; legs black, the abdomen and prosternum red, the latter blackish basally in the male. Length (σ^7, φ) 10.5–11.2 mm.; width 2.9–3.1 mm. New Mexico.

Differs from *discoideus* in the maculation of the prothorax. The following is much larger but may be considered a subspecies of *sayi* for the present:

Crossidius bilenticulatus n. subsp.—Stouter in form, similar in coloration and in maculation, except that the two ante-median black spots of the pronotum are less anterior and isolated, though obliquely oval, and the punctures less coarse but deeper; antennæ (φ) barely two-thirds as long as the body, much stouter and more flattened and serrulate distally than in the preceding; abdomen and prosternum bright red throughout. Length (φ) 14.0 mm.; width 4.2 mm. New Mexico.

The elytral humeri are more rounded and the elytral punctures still denser than in *sayi*, though there is great similarity elsewhere, except in size and in the antennæ.

Crossidius submetallicus n. sp.—More elongate and more convex than either of the preceding and with the elytra not parallel but feebly cuneiform, with the surface more declivous to the broadly rounded apices; surface more shining, the dark areas of the elytra with greenish-metallic lustre; vestiture pale, not dense, long on the head and prothorax, the former black; antennæ (♂) barely longer than the body, rather less slender than in *sayi* but otherwise nearly similar; prothorax slightly less transverse, the subparallel sides less rounded, red, with a large, posteriorly bifurcate apical black area, extending slightly behind the middle, the basal black margin anteriorly expanded along the middle, leaving a sinuous red band separating the black areas, the punctures strong and close, rather unequal in size; scutellar vestiture not so dense; elytra with the strong and deep punctures only moderately coarse and everywhere well separated; abdomen black, rufescent apically; prosternum deep black, except on the flanks. Length (♂) 12.7 mm.; width 3.5 mm. Colorado (Boulder Co.).

Differs from the two preceding in the less parallel form, subcuneate and submetallic elytra, which are less closely punctate and in the black prosternum of the male, this being largely red in *sayi* in both sexes.

Tylosis Lec.

The various modifications of this Sonoran genus resemble each other so closely in their general physiognomy, that thus far no one has attempted to define specific forms among them, excepting LeConte, who many years ago named two or three, which were subsequently suppressed by Dr. Horn. I find however, that this action was without warrant, for the species are as well defined by the male sexual characters as those of *Batyle*, and several other genera, where the coloration or general habitus varies from species to species within but very narrow limits, seeming thereby to indicate an absence of specific differences. The species are all bright red, rather shining, coarsely and closely punctate, more coarsely and loosely toward base and more finely and densely toward apex of the elytra, with the vestiture very short and sparse above but much denser and rather conspicuous beneath, and all here defined have the five black callous spots of the pronotum absolutely alike. The general scheme of elytral ornamentation is also of the same order throughout, but varies greatly in development from one sex or species to another, though not so greatly as has been assumed among individuals of the same sex of the same species. The male has the elytral spots much less developed than the female as a rule. I seem

to find some eleven species and subspecies among my material, omitting *sellata* Lec., which is unknown to me but certainly valid; it belongs to the *medialis*—*parva* section below, but is much larger than any one at present in my cabinet, all of that section here described being very much smaller than *maculata* and allied forms. The purely 12-jointed antennæ in both sexes very clearly isolates this genus among its allies.

Posterior spots of the elytra at a considerable distance from the apices, larger species. 2

Posterior maculation much closer to the elytral tips but never involving the latter; intermediate spots much less ante-median, in fact only very little before the middle; species much smaller in size. 6

2—Form very stout in the female, much the largest of the genus; coloration as usual, the head, antennæ, five pronotal callous spots, scutellum and humeral, post-scutellar, large quadrate ante-median and similarly large subapical spots on the elytra, deep black, the two latter broadly united in pairs across the suture, forming transverse blotches, and also united longitudinally by a narrow parallel sutural black line; under surface black, the prosternum wholly red, excepting the coxæ; legs black throughout; elytra parallel; prothorax strongly transverse, the sides parallel and but feebly arcuate, abruptly rounding at apex and base. Length (♀) 19.0 mm.; width 5.8 mm. Arizona (San Bernardino Ranch, Cochise Co.),—Snow.

robusta n. sp.

Form less stout, not so large in size. 3

3—Prothorax much wider than long [almost twice as wide as long—LeConte], the sides of the elytra slightly converging from the base even in the female, the ante-median spots of the elytra transverse, not oblique, the two subapical isolated. Length 14.5 mm.; width 4.3 mm. New Mexico.....**maculata** Lec.

Prothorax never more than one-half wider than long, undulatingly rounded at the sides throughout, sometimes slightly prominent behind the middle, narrowed more or less anteriorly to the broadly truncate apex. 4

4—Male with the prosternum wholly black before the coxæ, the black extending slightly upon the lower part of the flanks; body more elongate than usual, the antennæ very long, fully two-thirds longer than the body, the fifth joint distinctly longer than the sixth, the latter 3.2 mm. in length; prothorax more elongate than in any other, barely a third wider than long, unusually narrowed toward apex; elytra long, strongly cuneiform, the basal spots small, the ante-median obliquely subquadrate, attaining the suture but not prolonged, the ante-apical small. Length (♂) 16.5 mm.; width 4.8 mm. New Mexico (locality, unrecorded).**argus** n. sp.

Male with the prosternum black but broadly and sharply red at apex..5

5—Male with the prothorax unusually large, very nearly as wide as the base of the elytra, one-half wider than long, but slightly narrower

apically, the black of the prosternum sharply limited at the sides, not extending to the flanks, the elytra long, very strongly cuneiform, the humeri unusually prominent, the two basal spots well developed, the ante-median small, slender, very oblique to the suture, the posterior wholly wanting; antennæ nearly as in *argus* but with the fifth and sixth joints equal, 3.8 mm. in length. Female much stouter and with perfectly parallel elytra, broadly and evenly rounded at apex, the prothorax much narrower than the elytra, the latter maculate as in the male, except that the larger oblique ante-median spots extend, very much narrowed, along the suture nearly to the apex, the posterior spot small and more lateral than usual, much nearer the side margin than the suture. Length (♂, ♀) 16.5 mm.; width 4.8–5.1 mm. New Mexico (Jemez Springs),—Woodgate.

sexualis n. sp.

Male with the prothorax similar but smaller, much narrower than the base of the elytra, the black of the prosternum similar and with a similar red nick at the middle anteriorly but with the lower part of the flanks also more indefinitely black and the intercoxal process not wholly black but red; elytra much less cuneiform and less elongate, two and one-half times as long as wide, the post-scutellar spot wholly wanting, the humeral minute, the ante-medial very small, transverse, isolated, the subapical very small but in the usual position, nearer the suture than the sides; antennæ very slender but not quite so long as in the two preceding, the fifth joint a little longer than the sixth, which is 3.2 mm. in length. Female slightly stouter, distinctly shorter, the elytra perfectly parallel, with the combined apices evenly rounded, the two subbasal spots very small, the ante-medial narrow, very oblique to the suture, extending finely along the latter to the subapical spots combined in transverse rhombus. Length (♂, ♀) 14.8–15.5 mm.; width 4.7 mm. Texas (El Paso),—Dunn.

texana n. sp.

6—Elytra in the female conjointly broadly arcuato-truncate at tip, the external angles obtusely rounded. Body parallel, moderately stout, colored as usual, the subbasal elytral spots small, the post-scutellar very minute, the submedian moderate, oblique but not quite attaining the suture, the posterior largest, rounded, broadly truncated at the suture, separated from the tip by one-half its length; prothorax less than one-half wider than long, much less rounded at the sides than usual; antennæ (♀) very slender, as long as the body, the last joint much shorter than the eleventh as usual in that sex; prosternum and the process wholly red, minutely, sparsely sculptured. Length (♀) 12.2 mm.; width 3.5 mm. New Mexico (Jemez Springs).

subtruncata n. sp.

Elytra in both sexes conjointly evenly rounded at apex.....7

7—Prothorax short, two-thirds wider than long, coarsely, deeply punctate, with a distinct median impunctate line from apex to the median callus; elytra parallel, slightly wider than the prothorax, the subbasal spots well developed, the submedian quadrate, slightly sinuate before and behind, not quite attaining the suture, the subapical moderate, posteriorly oblique but not involving the sutural bead;

- antennæ (♀) slightly longer than the body, the twelfth joint slender, finely pointed, barely a third as long as the third, three-fourths as long as the eleventh. Length (♀) 10.0 mm.; width 2.7 mm. New Mexico (locality unrecorded).....**brevicollis** n. sp.
- Prothorax less abbreviated, never more than one-half wider than long. .8
- 8—Male with the well defined black area of the hypomera or inflexed flanks of the prothorax separated from the anterior margin by a sharply defined red band.....9
- Male with this equally well defined black area solid to the apical margin; entire prosternum as in the preceding, deep black.....10
- 9—Prothorax moderately coarsely, very closely punctate, the impunctate line variable but never well defined. Male with the antennæ very slender, two-thirds longer than the body, the joints decreasing very slightly in length, twelfth arcuate distally, very slender, distinctly longer than the eleventh; subbasal spots of the elytra well developed, the submedian transverse, sometimes slightly prolonged posteriorly on the suture, the subapical suboval, moderate, isolated or oblique to the suture. Female with the antennæ not less slender, a fourth longer than the body, the last joint two-thirds as long as the eleventh and very much more slender; subbasal elytral spots as in the male, the two more posterior also similar but much larger, broadly uniting on the suture and connected longitudinally by a black sutural line; longitudinal distance between the spots much greater than their own length. Length (♂ 2, ♀ 1) 11.5–12.2 mm.; width 2.8–3.3 mm. New Mexico (Jemez Springs).....**medialis** n. sp.
- A—Prothorax as in the preceding. Male with the elytra much shorter and more parallel than in *medialis*, with the subbasal spots not quite so large, the submedian very large, oblong, obliquely attaining the suture very broadly but not prolonged, the subapical similarly large but rounded, broadly attaining the suture, the anterior outline of the combined spots sinuate suturally; antennæ still more slender, barely one-half longer than the body, the outer joints relatively much shorter and more rapidly decreasing, the last but very little longer than the eleventh; hind tibiæ unusually coarsely punctate. Length (♂, ♀) 9.5–12.0 mm.; width 2.6–3.0 mm. New Mexico (Jemez Springs).....**bifasciata** n. subsp.
- 10—Prothorax similar. Male with the antennæ almost similar throughout, the subbasal spots of the elytra large, elongate-oval, the submedian very large, broadly attaining the suture, the subapical similarly very large, the combined spots forming a large area which gradually narrows to the combined submedian blotch; abdomen finely, very closely punctate, the fifth ventral very broadly arcuate at apex as usual but longer than in the preceding, a third longer than the fourth; hind tibiæ much more finely punctate. Length (♂) 10.0 mm.; width 2.7 mm. New Mexico (Jemez Springs).
- conjuncta** n. sp.
- A—Prothorax more coarsely punctate and a little more abbreviated, similarly well rounded at the sides. Male elytra with the inner of the subbasal spots much smaller than the outer, the very large blotches formed by the confluent submedian and subapical spots

uniting longitudinally by an angular extension of the anterior of the two and not the posterior, the longitudinal distance between the blotches, as in *conjuncta*, very much shorter than the length of the blotches and a little less than the distance separating the large transverse blotches in *bifasciata*, though even there it is less than the length of the blotches and very different from the condition in *medialis*; antennæ very slender, one-half longer than the body, nearly as in the preceding but with still shorter three penultimate joints; abdomen finely but notably less closely punctate, the fifth segment nearly similar but much less broadly rounded. Length (♂) 8.5 mm.; width 2.0 mm. New Mexico (Jemez Springs).....*parva* n. subsp.

It will be noted that seven of the above described forms, counting the eight assumed representatives of *maculata*, are from a single locality in New Mexico, which, in conjunction with the supposed unusual variability of the species, might be held to render somewhat injudicious or premature the definition of specific forms on the lines above suggested; but in regard to this it can be said at least, that structural and sexual characters have figured prominently or even primarily in coming to this conclusion. There are many marked structural differences throughout the series; for example, the prothorax in *robusta* is parallel and nearly straight at the sides, rapidly rounding at apex and base, giving that species a very different facies from the others, irrespective of size and ornamentation. *Argus* and *sexualis* are also well marked species in the form and proportion of the parts and in the male sexual characters. I am almost certain that *medialis* is different specifically from any one of the last three forms of the tables but place *bifasciata* as a subspecies for the present. The two primary divisions of the genus indicated above are founded upon structural differences of unequivocal weight, this being strikingly evident on mere casual observation. Mr. Bates describes certain prosternal peculiarities of coloration in differentiating the Mexican *puncticollis* and *angusticollis*, which relate obviously to the males alone, but does not state that the coloration noted is purely sexual; in the female the entire prosternal surface is always red and much less strongly sculptured than in the male, so far as noted. Both these species differ from any of our own in having the prothorax cylindric and nearly as long as wide, with the entire elytral apex black. My two examples of *puncticollis* are from Guerrero and are males; it has been recently announced by

Mr. Schaeffer as occurring at Palmerlee, Arizona (Bull. Bk. Inst., I, p. 162) and with the usual great color variability, which, in the light of the above statements, is probably in large part sexual in origin.

Stenosphenus Hald.

An extensive genus in the warmer parts of North America and having rather mixed affinities; the spinose antennæ suggest some of the next tribe, and other features recall *Elaphidion*, but, on the whole, it is very isolated and without close allies. The two following species have not yet been described:

Stenosphenus lucanus n. sp.—Rather stout, less parallel than *dolosus* Horn, shining, deep black, the prothorax above and beneath bright red, the femora piceo-rufous, the anterior brighter than the others, the outer face of all the tibiæ with a fine strong entire carina, abbreviated apically only on the anterior; head strongly, densely punctate, with the usual fine raised median line; antennæ (♂) not quite one-half longer than the body, very slender, of the usual structure, the spines small and slender; prothorax widest rather behind the middle, not quite as long as wide, the sides evenly rounded, more converging anteriorly, the apex three-fourths as wide as the base, the basal constriction moderate; punctures rather small but perforate, sparse, very irregular in distribution; elytra wider than the prothorax, rather strongly narrowed from base to apex, not quite two and one-half times as long as wide, rather coarsely, strongly punctate, the punctures closer medially and externally on each elytron, sparse toward the suture, the apices obliquely truncate and strongly bispinose. Length (♂) 10.0 mm.; width 2.5 mm. Lower California.

Not closely allied to any other and differs from *rufipes* Bates in its less coarsely punctate pronotum, shorter antennæ and other features. The prosternum of the male has a depressed and very isolated, transversely oval and coarsely, densely punctate areola midway between each coxa and the anterior margin.

Stenosphenus pruddeni n. sp.—More elongate than *lucanus*, not parallel, shining, pale rufous, the elytra and abdomen piceous; head rufous, black basally, coarsely, closely punctate between the median line and the eyes; antennæ (♀) at least a fifth shorter than the body, joints three to seven spinose; prothorax as long as wide, the sides feebly converging and broadly, feebly arcuate between the distinct basal and apical constrictions, the punctures coarse and conspicuous, rather sparse but very uneven in size and distribution, with a broad impunctate median line; scutellum semicircular, densely pubescent; elytra much wider than the prothorax, but little narrowed from the base, two and two-thirds times as long as wide, transversely truncate and very minutely bidentate at apex, the punctures strong, only moderately sparse, closer on the flanks,

gradually slightly smaller from base to apex, the short hairs cinereous, distinct; legs rufous throughout, gradually more obscure distally; prosternum transversely rugulose, very finely, closely punctato-rugulose laterally. Length (♀) 10.0 mm.; width 2.3 mm. Arizona (Cañon of the Colorado),—T. Mitchell Prudden.

A distinctly isolated species, distinguishable by its coloration and strong punctures. The female prosternum in many species has a feeble inequality of sculpture, suggestive of that so strongly developed in the male.

Mr. Schaeffer is mistaken in stating (Journ. N. Y. Ent. Soc., 1911, p. 124) that *longicollis* Csy., is the same as *lepidus* Horn. Even were his remarks as to the great variability of the sternal sexual characters of the male, strictly an expression of the reality and not due in large part to confounding different species or subspecies, it can nevertheless be proved that *longicollis* is distinct from *lepidus*; for the prothorax is not only more elongate than in *lepidus* but it differs in color, being broadly clouded with piceous laterally, and the elytral punctures are more numerous and, not only not more distinct and closer apically, as stated by Dr. Horn of *lepidus*, but still smaller than basally and not at all less sparse. The antennæ also are much longer, being about three-fourths longer than the body in the male. But, as a matter of fact, the prosternal characters of the male are of much importance and, as shown by the material before me, do not vary intraspecifically in the manner stated by Mr. Schaeffer, although there is some variability as in nearly all secondary sexual structures. The difference between *longicollis* and *lepidus* in this respect is very great indeed.

Tribe CLYTINI

Clytus and numerous allied genera differ from the preceding tribe, not only in the general facies of the body, but in many special characters relating to form of the head, type of ornamentation, antennal structure and other features; the eyes are similarly always very finely faceted and are narrowly emarginate. Disregarding the group Anaglypti and the genus *Euryscelis*, which has 12-jointed antennæ, our generic groups of the tribe may be briefly defined in the following manner:

Basal process of the abdomen bluntly rounded or truncate at apex. 2
 Basal process acute. 7

- 2—Antennæ with joints three to six or seven truly spinose externally at apex.....3
 Antennal joints not spinose at apex, though sometimes very acutely angulate or subspinulose.....4
- 3—Prothorax not modified at base, evenly rounding at the sides to the basal constriction, the pronotum biimpressed; antennæ long; elytra intricately maculate with pubescent lines, many of which are longitudinal. [Type *Clytus hartwegi* White].....**Tylcus**
- Prothorax abruptly declivous laterally at base as in *Cyllene*, the pronotum differing in being solidly and densely clothed with short pubescence, never banded; antennæ long and notably heavy; elytra carinulate subsuturally, with irregular transverse bands and finer lines of pale pubescence, very acutely unispinose at tip; coxæ widely separated, the prosternal process flat, abruptly vertical behind, the mesosternum very steeply but convexly declivous; met-episterna broad; basal joint of the hind tarsi long, rather compressed. [Type *Clytus antennatus* White].....**Megacyllene**
- 4—Prosternum flat, broad between the coxæ, the posterior edge prominent, the posterior wall vertical or even concave; prothorax abruptly declivous at base laterally and with transversely pubescent bands; elytra carinate subsuturally, except basally, transversely fasciate or spotted with dense pale pubescence, the apices angulate or acute; coxæ widely separated, the mesosternum vertical or inclined; met-episterna and tarsi as in the preceding, the antennæ moderately long, much more slender. [Type *C. signifera* Newm.]....**Cyllene**
- Prosternum horizontal or nearly so but very narrow between the coxæ; mesosternum broadly, evenly sloping.....5
 Prosternum wider between the coxæ and gradually sloping posteriorly; mesosternum also gradually sloping.....6
- 5—Head transversely subprominent between the antennæ, thence sloping very steeply to the frontal margin, the antennæ slender throughout, cylindric, moderately long, the third joint longer than the fourth and very nearly as long as the fifth; prothorax evenly rounded at the sides, more narrowed basally, the sides slightly sinuate at base; scutellum broad, rounded, well developed; elytra as in *Cyllene*, except that the subsutural carina is obsolete or barely traceable and the finer transverse lines of cinereous pubescence more irregular, with a short longitudinal bifid line near the suture at apex, which never appears in *Cyllene*; legs shorter than in that genus. [Type *C. fulminans* Fabr.].....**Arhopalus**
- Head nearly as in *Arhopalus* but more abbreviated in front of the antennæ, the latter shorter, more compact and slightly thickened distally; prothorax and scutellum similar, the former relatively less developed; elytra as in *Cyllene*, the carina similarly very distinct; mesosternum generally unmodified but sometimes with a subtuberculate median longitudinal carina; legs only moderate in length, slender, the basal joint of the hind tarsi not longer than the entire remainder; body very densely ochreo-pubescent, the elytra irregularly and transversely variegated. [Type *O. citrinus* Chev.]

***Ochræthes**

- 6—Head as in *Ochræthes* but relatively smaller; antennæ rather short but very thick, rapidly tapering distally, the joints basally very broad, strongly flattened, obtriangular, with their apices deeply and subsymmetrically emarginate and acutely bidentate, three to seven subequal, thence narrower and shorter, the eleventh somewhat appendiculate at tip; prothorax broadly oval, nearly as wide as the elytra, banded only at the sides; scutellum broad, well developed; elytra as in *Cyllene* but with the subsutural carina almost completely obsolete, the ochreous bands forming a peculiar design; legs only moderate in length but notably thick throughout, the basal joint of the hind tarsi barely at all compressed and not longer than the remainder. [Type *Clytus speciosus* Say]..... **Glycobius**

Head as in *Glycobius* and likewise relatively small; antennæ rather short, moderately slender, equally thick throughout beyond the basal joint, cylindric, the joints not emarginate, the subequal third and fifth longer than the fourth; prothorax similarly large and transversely oval, strongly convex, not ornamented; scutellum similarly large, broad and rounded; elytra usually but little wider than the prothorax, tapering more or less slightly, the apices rounded or but little modified, the surface more convex, without trace of subsutural elevation, ornamented with sharply defined yellow design in the female, the maculation obsolete or barely traceable in the male; legs moderate in length, often notably thick, the basal joint of the hind tarsi longer than the remainder and strongly compressed; body similarly large in size. [Type *Clytus nobilis* Say]..... **Calloides**

- 7—Basal joint of the hind tarsi longer than the remainder.....8

Basal joint much shorter, scarcely longer than the next two combined..14

- 8—Front bicarinate; antennal fossæ margined above by a long acute cariniform line; eyes moderate, subtruncate or less rounded beneath; antennæ moderate to short, rather slender, filiform to slightly thickened distally, the third joint longer than the fourth or fifth; prothorax rounded at the sides, feebly subconstricted at base, evenly sculptured; scutellum well developed, broadly rounded; elytra not or but little wider than the prothorax, generally feebly tapering, obliquely truncate and sometimes unispinose at apex; anterior coxæ rather narrowly separated, the intermediate widely, with the mesosternum gently sloping; legs rather slender, the posterior long, the femora stout (♂) to slender (♀); met-episterna wide. [Type *Clytus (Xylotrechus) sartorii* Chev.]..... **Xylotrechus**

Front not bicarinate, the antennal fossæ not acutely margined above..9

- 9—Pronotum with short transverse carinules, disposed in one or more longitudinal lines or series; front more or less extended beneath the eyes, the genæ long; eyes moderate, subcircular, with the usual eccentric emargination; antennæ more or less short, slightly thickened and compact distally; prothorax rounded at the sides, bitruncate, as wide as the elytra or very nearly; scutellum large, broadly rounded; elytra even in convexity, having three or four fine transverse lines of dense pale pubescence, variously disposed, the apices obliquely truncate, generally unispinose; anterior coxæ widely separated, the sterna sloping; met-episterna wide; legs

- moderate, the posterior very long, thicker in the male. [Type *C. luscus* Fabr.]..... **Neoclytus**
- Pronotum even as a rule, the sculpture fine, dense and evenly disposed throughout 10
- 10—Head and prothorax well developed, the latter generally but little narrower than the elytra; front gradually sloping, the inter-antennal space not or but very slightly prominent; anterior coxæ subcontiguous or very narrowly separated; mesosternum moderately broad, gently sloping; met-episterna sometimes a little narrower; prothorax evenly rounded at the sides, not or scarcely at all constricted at base; eyes subcircular, rounded behind.....11
- Head and prothorax relatively less developed, the latter much narrower than the elytra; front abruptly vertical from the more prominent inter-antennal ridge, short; anterior coxæ subcontiguous; mesosternum not gently sloping but almost vertical; eyes more transverse, having the usual emargination but broadly subtruncate at base..13
- 11—Outline and general characters nearly as in *Neoclytus*, the elytra generally somewhat tapering but less modified at tip and not spinose as a rule, the legs similarly rather long, the hind femora extending greatly beyond the elytra, especially in the male, but with the middle femora more strongly claviform, the met-episterna not very evidently narrower, similarly parallel; elytral ornamentation generally in fewer irregular fasciæ. [Type *Leptura verbasci* Linn.].. **Clytanthus**
- Outline more parallel and cylindriciform, the legs relatively less developed, more slender and differing less sexually, the elytra ornamented somewhat as in *Clytanthus* and *Xylotrechus*; front and genæ short....12
- 12—Prothorax longer than wide, equal at base and apex, the surface feebly bitumorse near the base, which is very briefly subtubulate; scutellum smaller than usual, scarcely wider than long; elytra parallel, rounded and feebly subtruncate at the apices; antennæ long, very slender, filiform; met-episterna exceptionally narrow; body small, slender, the upper surface less convex than usual. [Type *Clytus albofasciatus* Lap-Gory]..... **Clytoleptus**
- Prothorax wider than long, equal at base and apex, not at all constricted at base and not bitumorse; scutellum larger and broader; elytra but slightly modified at apex, generally very nearly parallel; antennæ short, incrassulate and compact distally; met-episterna of the usual relative width; body larger, stouter, more convex above. [Type assumed *C. marginicollis* Lap-Gory]..... **Clytus**
- 13—Prothorax, antennæ, met-episterna and scutellum nearly as in *Clytus*, the first more constricted and subtubulate at base, the legs not differing much sexually, only moderate in length, the posterior not unusually developed; elytra ornamented with four or five narrow fasciæ. [Type *C. nimbatæ* n. sp.]..... ***Clytopsis**
- 14—Body somewhat as in *Clytopsis* but narrower and more convex, the eyes similarly rather transverse and broadly subtruncate at base, having an unusually large emargination; front very short, vertical; antennæ moderately long, somewhat tapering, flattened and very free-jointed distally; prothorax nearly as in *Ochrathes*, constricted and tubulate at base, coarsely sculptured; scutellum moderate;

elytra much wider than the prothorax; crossed by a median pale fascia, rounded or but very slightly modified at the apices; anterior coxæ moderately separated, the mesosternum gently sloping, the met-episterna of only moderate width; legs rather stout, moderate in length, the femora claviform, the posterior extending but little beyond the elytra even in the male, wholly unarmed at apex. [Type *Clytus lanifer* Lec.].....**Paraclytus**

TYLCUS (n. gen.) is proposed for the type above named, because of its spinose antennæ, general facies, type of ornamentation and other features, which render it very inharmonious with the normal forms of *Trichoxys* Chev., no form of which tropical genus seems to come so far to the northward as our Mexican boundary.

MEGACYLLENE (n. gen.) is also proposed for a single aberrant species, so far as yet discovered; *antennatus* White (= *eurystethus* Lec.) is strikingly distinct from the members of *Cyllene* proper in other ways besides the remarkably developed and strongly spinose antennæ, among which the different type of pronotal vestiture, less prominent and less anteriorly precipitous mesosternum and absence of the conspicuous triangular elevation between the antennæ are the most obvious.

Cyllene Newm.

One of the more sharply defined and isolated genera of the Clytini and well represented in the colder as well as the tropical regions of the new world. There are at least two rather distinct intrageneric groups, represented by *erythropus*, *crinicornis* and other tropical forms on the one hand and *robinia*, *chara* and other more heavily built species, inhabiting the north temperate regions; in the latter type the mesosternum is generally less prominent and less vertically inclined anteriorly as a rule, and the prothorax less arched at the sides and less angulate before the basal constriction; also having less slender antennæ; it is quite proper I think to regard these groups as subgenera. *Cyllene brevipennis* Lec., is also apparently of subgeneric value and the disposition of it as a synonym of *decora* Oliv., by Dr. Horn is manifestly incorrect. In the *erythropus* group, the three following are hitherto undescribed; they have the prothorax quadrifasciate and are therefore allied to *crinicornis* Chev.:

Cyllene reducta n. sp.—Form as in *crinicornis* but narrower, the elytral maculation of isolated spots also similar, except that the two pairs near the suture, before and behind apical fourth, are much more approximate longitudinally; interantennal elevation narrower and less posteriorly

flattened; antennæ nearly similar; prothorax less transverse though of similar form and ornamentation, the sides evenly arcuate and converging from the basal constriction to the apex; elytra similar but at base a little wider than the prothorax and not equal thereto as in *crinicornis*; legs more slender. Length (♂, ♀) 11.6–12.5 mm.; width 3.4–3.6 mm. A single pair without designation of locality but probably from Texas.

Closely allied to *crinicornis*, with a pair assumed to be of that species, taken at Brownsville, Texas, it has been compared. It is notably narrower in form than *crinicornis*.

Cyllene filicornis n. sp.—Very small in size, slender, the ornamentation throughout as in *reducta*, the legs and antennæ similarly rufous; inter-antennal protuberance more feeble, more laterally expanded at the frontal margin; antennæ (♂) similarly about as long as the body but extremely slender and filiform, the joints similarly proportioned in length; prothorax differing conspicuously in form from either *reducta* or *crinicornis*, being parallel and straight at the sides to the middle, then gradually and more strongly rounding to the apex, much less transverse, being only about a third wider than long; elytra as in *reducta* but still more distinctly wider than the prothorax; legs slender, very much shorter. Length (♂) 8.4 mm.; width 2.5 mm. Texas.

Distinguishable readily from the preceding by its very small size, still more slender form, very much more slender and filiform antennæ, outline of the prothorax and other characters.

***Cyllene andesiana** n. sp.—Similar throughout to *crinicornis* in form and ornamentation but a little stouter, somewhat larger and with more transverse prothorax, the spots of dense pale pubescence better defined, denser and of deeper yellow color; antennæ (♀) similar, except that the third joint is a little longer than the fourth and not shorter than the fourth as in *crinicornis*; elytra with the black ground more finely and densely velvety. Length (♀) 15.0 mm.; width 4.8 mm. Ecuador (Babahoyo, at the foot of the Andes).

Distinguishable from *crinicornis* by the characters given above; the two sutural pairs of spots before and behind posterior fourth are more widely separated longitudinally than in *crinicornis*.

Of *erythropus* Chev., I have before me a pair, in excellent condition, from Guerrero; it is ornamented very nearly as in *crinicornis*, except that there are only three fine transverse pronotal belts of pale yellow and the pygidium is pallidly lineate along the middle; it is also notably larger in size.

The two following species come nearer to *Megacyllene antennata* than any others and are native to the same regions; in them the antennal joints are almost truly spinose, the outer angles being finely and acutely prolonged for a short distance, but in all the other

characters of the front, pronotal ornamentation and sterna they are properly *Cyllene* and not allies of *antennata*:

Cyllene snowi n. sp.—Rather stout and convex, black, testaceous under the fasciæ of the elytra, black beneath, piceous posteriorly, the legs and antennæ red-brown; head with two strong, obliquely and anteriorly converging carinæ between the antennæ, trifasciate with bright yellow, having some scattered coarse punctures basally; antennæ (♀) about three-fifths as long as the body, rather stout, the second joint somewhat more than half as long as the third, which is equal to the fourth, both a little shorter than the fifth, clothed with very short ashy hairs, which distally become very dense, giving a silvery lustre; prothorax nearly one-half wider than long, narrowed only very slightly from the obtuse angles at the constriction to the apex, the sides but feebly, evenly arcuate; surface finely and closely but clearly perforato-punctate throughout, except in a small convex spot at the middle of the length near lateral third, which is excessively minutely, closely punctulate, clothed throughout with short cinereous hairs, except three transverse fasciæ of bright sulphur yellow, the apex not yellow; scutellum large, densely pubescent, broadly subtriangular; elytra nearly a fourth wider than the prothorax and more than three times as long, slightly tapering, obliquely truncate at the apices, the angle obtuse, not at all dentiform; surface with close-set uneven sinuous bands, two near the base yellow, a broader one near basal third ashy gray, then two finer and yellow, then a broad indefinite one of ashy gray, the apices broadly yellowish, the depressed sutural region almost solidly cinereous; under surface densely clothed with yellow and cinereous hairs indefinitely blending; legs rather thick, closely, cinereously pubescent. Length (♀) 17.0 mm.; width 5.6 mm. Arizona (Oak Creek Cañon—elev. 6000 feet),—F. H. Snow.

This very fine species is wholly isolated and needs no further comment.

Cyllene zuniana n. sp.—Much less stout and more parallel, nearly as convex; head and prothorax deep black, the former nearly as in *snowi*, except that the converging carinæ are feeble and indefinite; antennæ in the type not quite three-fourths as long as the body, more slender but otherwise of nearly similar structure, the second joint shorter, not one-half as long as the third, the latter and succeeding joints with similar very acutely subspiniiform outer angles; prothorax nearly one-half wider than long, widest and laterally subprominent at the middle, the sides thence slightly converging and subsinuate posteriorly to the constriction and much more converging and evenly arcuate anteriorly to the apex; surface with rather small but perforate, tolerably close punctures, except in two large convex spots as in *snowi* but larger and also broadly along the median line basally and thence laterally along the summit of the constriction, curving forward toward the isolated spots, these more convex areas very minutely punctulate; surface clothed with short cinereous hairs, crossed by three yellow fasciæ, not entire as in *snowi* but narrowly interrupted at the middle; elytra slightly wider than the prothorax,

nearly as in *snowi*, except that the short hairs, which are less dense and more easily denuded, are wholly cinereous, disposed in two feeble sub-basal fasciæ, then a broader one and thence in three broad subequal transverse spots, not attaining the carina, through the remainder of the length to the apex, the depressed sutural area cinereous, the integument under the fasciæ pale; apices as in *snowi* but more obliquely truncate; legs much more sparsely clothed. Length 12.5 mm.; width 3.8 mm. New Mexico (Magdalena Mts.),—Snow.

The type is probably a male, as the fifth ventral is truncate, but the antennæ are more as in the usual female. It differs from *snowi* very much in the form of the prothorax, more slender antennæ and wholly cinereous elytral vestiture. The type was sent to me as *ornata*, var. *lutosæ*, as was also the type of *snowi*, but they are very far from being that species or in any way mutually identical.

In my opinion the species described by LeConte under the name *infausta*, is identical with *decora* Oliv., the figure of the latter given by Laporte and Gory having accidentally lost the median fasciæ of the elytra; it is distributed from Georgia to Kansas, Nebraska and New Mexico, as shown by the series in my cabinet and does not vary in its sharply outlined elytral fasciæ, six or seven in number, any more than the notably constant *robinia*; it is an entirely distinct species from *chara* Say. The following is an allied species, which is however distinctly different:

Cyllene angulifera n. sp.—Much narrower than *decora* (*infausta* Lec.) and more convex, pale reddish-brown in color throughout—perhaps somewhat immature, though with no additional evidence of immaturity than the pale color; head with the raised interantennal surface indistinct and feeble, broadly triangular; antennæ (♀) filiform but rather stout, barely one-half as long as the body, the second joint fully one-half as long as the third, which is as long as the fourth and somewhat thicker, both much shorter than the fifth; prothorax nearly one-half wider than long, the sides parallel, evenly and strongly arcuate, feebly sinuate at the base, the basal constriction laterally very feeble; surface finely, evenly sculptured and with close, dusky-cinereous pubescence, crossed by three entire cinereous-white fasciæ, the anterior separated from the second by twice the distance separating the latter from the basal fasciæ; elytra with fasciæ as in *infausta*, except that they are wholly cinereous in color, that the third is much more sharply and posteriorly angulate and that the fifth is continuously transverse, not broken at the carinæ, the latter being obsolete; apices obliquely truncate, not dentate; abdominal segments less pubescent basally and along the middle; legs short and slender. Length (♀) 13.0 mm.; width 3.8 mm. Kansas.

To be known at once from *decora* by its narrower, more convex form, subobsolete constriction of the prothorax, barely traceable

elytral carinæ, by the very unequally spaced and more entire pronotal fasciæ and other features, aside from its pale coloration.

Of *chara* Say, there are several well defined subspecies, as shown in the following tabular statement; the prothorax is densely clothed with pale pubescence, crossed by three black fasciæ, always abbreviated at the sides, and the elytra differ from any other type of *Cyllene* in having the dense pale pubescence in large solid masses basally, with irregular fasciæ posteriorly:

- | | |
|--|---------------------------|
| Elytra with the apical truncature broad, only slightly oblique..... | 2 |
| Elytra with the apical truncature much narrower, very strongly oblique, the angle however but slightly more dentiform..... | 5 |
| 2—Elytral vestiture yellow, the basal dense area occupying a little less than basal third..... | 3 |
| Elytral vestiture pale red-brown, the basal solid area extending beyond the middle..... | 4 |
| 3—Larger, the elytra very much wider than the prothorax; pubescence somewhat tawny-yellow, the two apical fasciæ fine, well separated. Length (♀) 21.5 mm.; width 7.3 mm. Indiana | <i>chara</i> Say |
| Smaller and narrower, the elytra very much less considerably exceeding the prothorax in width, the latter more parallel, rounded, less narrowed from base to apex; pubescence bright sulphur-yellow in color, the basal solid area more liable to intrusion of a subbasal black fascia, the two apical fasciæ broader, frequently forming an apical ring. Length (♂, ♀) 18.0–19.0 mm.; width 5.8–6.0 mm. Kansas. | <i>kansana</i> n. subsp. |
| 4—Body still narrower, more parallel and less convex than in the two preceding, the two apical fasciæ as in <i>chara</i> , though likewise filled solidly occasionally; prothorax less developed, much narrower than the elytra; antennæ decidedly more slender. Length (♂, ♀) 17.0–19.0 mm.; width 5.4–6.2 mm. Iowa..... | <i>solida</i> n. subsp. |
| 5—Body more abbreviated, the feebly converging sides of the elytra more arcuate; antennæ (♂) more slender than in <i>chara</i> and <i>kansana</i> , nearly as in <i>solida</i> ; prothorax moderate, very convex, much narrower than the elytra, the solid area of pubescence as in <i>chara</i> ; legs less closely pubescent. Length (♂) 17.0 mm.; width 5.7 mm. Texas. | <i>genitiva</i> n. subsp. |

Lutosa Lec., is certainly a species distinct from any of the above; it is black, densely clothed throughout with short ochreous pubescence, the prothorax rounded, not at all shorter than wide, the elytral apices, legs and antennæ of normal form; it is 11.5 mm. in length and occurs in Kansas, near the Rocky Mountains.

The word *Cyllene* is feminine and not masculine, as inadvertently employed by American authors. The form *chara*, for the Greek name of Say's species, seems also to be more correct than *charus* as originally published.

OCHRÆTHES Chev.—This is a neotropical genus, no member of which extends to northern Mexico; it has most of the characters of *Cyllene*, including an equally strong subsutural carina on each elytron, but differs greatly in the form and structure of the prothorax, this being relatively much smaller and subcordate in outline. The various species are sometimes difficult to differentiate, owing to the very dense and more or less confused coating of ochreous pubescence. Perhaps our very isolated type of *Arhopalus* Serv., resembles *Ochræthes* in thoracic structure more closely than any other species of the north temperate fauna. *Ochræthes* is the name of the genus as originally published by Chevrolat and should therefore be adopted, irrespective of correct etymology. It has been printed since as *Ochræsthes*, *Ochræsthes*, *Ochresthes* and *Ochrestes*; so it is better to adhere to the original spelling and avoid doubt.

GLYCOBIUS Lec.—The generic name given by LeConte to *Clytus speciosus* Say, is eminently proper and should not be changed to *Plagionotus*. No true member of that genus approaches *speciosus* in its very broad tapering antennæ, with almost symmetrically emarginate joints, or in its peculiar scheme of ornamentation. *Speciosus* is the most conspicuous and one of the most isolated Clytids of the American fauna, and its special generic name *Glycobius* should rightfully be restored and not merged into the very chaotic mixture now known as *Plagionotus*.

Calloides Lec.

It does not seem to have been noted heretofore that the remarkable differences in color and vestiture pertaining to various examples of *Clytus nobilis* Say, are due entirely to sex. The discovery of this fact renders the systematic treatment of the somewhat numerous species a very easy matter. Besides the five species at present in my collection and defined below, the Mexican *Clytus (Plagionotus) regalis* of Chevrolat, must be included; it almost exactly resembles *biformis* and *muliebris*, but has the sculpture of the pronotum much more coarsely rugulose. The species known to me may be described as follows:

- Legs relatively not stout; elytra never much less than twice as long as wide in either sex and generally much more, sometimes a little shorter in the male than in the female. 2
 Legs very stout; elytra in the male barely three-fourths longer than wide, crossed by a very feeble or barely traceable submedian impression. . . 4

- 2—Female black, with feeble brownish tinge, the pubescence throughout extremely short, close but inconspicuous; antennæ simple, not quite one-half as long as the body, the outer joints rapidly very short, the last less than one-half longer than wide; prothorax transversely oval, evenly rounded, convex, nearly as wide as the elytra, briefly tubulate at base, wholly immaculate, minutely, confusedly and densely sculptured, with an indefinitely rounded discal area near outer fourth more coarsely and less closely punctate; scutellum large, semicircular, of the general dark ground color; elytra twice as long as wide, with the densely pubescent sulphur-yellow marking very sharply defined, consisting on each of a transversely oval subbasal spot, a small marginal one at basal fourth or fifth, a perfectly circular discal spot nearer the suture than the margin and just behind basal fourth, a fine transverse entire and slightly arcuate fascia just behind the middle and another suboblique fascia, broken into two spots, between the latter and the apex, which is not pale, minutely, obliquely and simply truncate; under surface clothed with minute plumbeous hairs, scarcely at all variegated, the prosternum more shining and transversely rugose. Male more slender than the female, black, the elytra paler, red-brown, dull in lustre like the female, the antennæ a little more than half as long as the body, the prothorax similar but fully as wide as the elytra and having a slender longitudinal crescent at lateral fifth, which is very sharply defined and more coarsely sculptured though not elevated; elytra similar throughout but rather more tapering and either wholly immaculate or with very minute yellow points, representing one or more of the large yellow spots of the female; under surface, prosternum and legs nearly similar. Length (♂) 17.5–22.0, (♂) 22.0 mm.; width (♂) 5.3–6.8, (♀) 6.9–7.2 mm. North Carolina, New Jersey, Indiana and Wisconsin.....*nobilis* Say

Female nearly as in *nobilis*, except that the spot between basal fourth and third on each elytron is invariably transverse and rectangular and not circular, and the apex more or less yellow.....3

- 3—Female larger and more elongate than in *nobilis*, similarly colored and with densely dull integuments; antennæ nearly similar but not deep black; prothorax of like form but more transverse and about as wide as the elytra, the fine, confusedly punctato-rugulose sculpture nearly uniform throughout; elytra a little longer, almost similarly maculate with spots and fasciæ of dense sulphur-yellow pubescence, except as above stated and in having the ante-apical fascia entire and not resolved into two spots and in having the apices almost solidly yellow, only the actual tip dark, also with a longer oblique truncature, with well marked external angle; under surface with very short uniform plumbeous pubescence, the apices of the ventral segments more distinctly yellow laterally and the prosternum more coarsely and densely rugose than in *nobilis*; legs longer, rufescent and not black. Male with the prothorax as in the female, the sinuous sublateral line of coarser sculpture barely traceable; elytra less elongate, paler red-brown, with the transverse spot near basal fourth much reduced, the fine median fascia feeble, faint and nubilous, the ante-apical

represented only by a fine subsutural dot and the apices not at all yellow. Length (σ^7) 22.5, (φ) 23.5 mm.; width (σ^7) 7.3, (φ) 7.5 mm. New Mexico (Fort Wingate) and Colorado. *biformis* n. sp.

Female nearly as in *biformis* but blacker, the elytra much deeper black and more velvety, the head between the antennæ more elevated and more deeply, longitudinally sulcate, the last antennal joint, not acutely oval and as long as the preceding as in *biformis*, but obtuse and much shorter than the tenth, the prothorax of similar form and sculpture but less transverse and smaller, much narrower than the elytra, the latter of nearly similar form and ornamentation, except that the ante-apical fascia is broken near the suture and the solid apical yellow area replaced by a fine transverse fascia near the tip, the apices not at all truncate but with the sutural angle evenly and broadly rounded; under surface with the prosternum more evenly punctate and less rugose, the denser apical hairs of the lateral part of the ventral segments paler yellowish-cinereous; legs nearly similar. Length (φ) 22.0 mm.; width 7.2 mm. New Mexico (Jemez Springs).

muliebris n. sp.

Female smaller, narrower, more parallel and less convex than in any of the preceding, dull black, the elytra piceous-brown; head nearly as in *biformis*, the antennæ paler, pale rufous, but little more than two-fifths as long as the body, with the outer joints still shorter, the tenth but very slightly longer than wide, the eleventh oval and a little longer; prothorax finely, evenly and densely sculptured, more globular, only between a fourth and fifth wider than long, otherwise similar, distinctly narrower than the elytra, the latter almost parallel, rather more than twice as long as wide, the sutural margin rounding outwardly at apex to meet the rounding sides in a very blunt angle; ornamentation nearly as in *biformis*, except that all the spots are smaller, and that the subbasal fascia is narrower and more basal than in any other, being on the basal convex declivity; the ante-apical is broken at the suture as in *muliebris*; legs and under surface nearly similar. Male more slender, the prothorax more strongly rounded at the sides, the nubilous feeble marking of the elytra nearly as in the male of *biformis*, the antennal joints shorter than in that species. Length (σ^7 , φ) 18.0–19.5 mm.; width 5.6–5.8 mm. Colorado.

coloradensis n. sp.

- 4—Form broader, more oblong and subparallel, the elytra more depressed, the color throughout deep black, the head and prothorax nearly as in *biformis*; prothorax (σ^7) as wide as the elytral base, strongly convex, not densely, confusedly rugulose as in all the preceding species, but with small and irregular, very close-set but definite punctures and more shining interspaces, the abruptly outlined arcuate sub-lateral crescent somewhat depressed and very coarsely punctate; elytra without ornamentation in the male, the apices minutely and obliquely truncate at the sutural angles; under surface less densely punctate and pubescent and more shining; vestiture throughout very short, only moderately dense, dusky and barely visible. Length (σ^7) 22.0 mm.; width 7.1 mm. California.....*lorquini* Buq.

These species differ from each other chiefly in general outline, in the different form of the post basal elytral spot, in the apical vestiture and modification of the elytral apices, the last being rather distinctive in all of them; *lorquini* differs, in addition, by the character of the pronotal sculpture, more depressed elytra and very much heavier legs. *Regalis* Chev., differs in the much coarser rugosity of the pronotum. The occasional subsuturally broken ante-apical fascia is a vestigial character due to the former presence of a subsutural carina, as in *Cyllene*; at present all trace of this has disappeared but it is distinctly observable though very obtuse in *Glycobius*.

Calloides "*nobilis* var. *mormonus*" Schaeffer, (Journ. N. Y. Ent. Soc., 1911, p. 124) belongs with the above described *biformis*, *muliebris*, *coloradensis* group, but is larger than any of these species (27 mm.) and, as the fasciæ are said to be all of equal width, must have much broader median and ante-apical fasciæ. The form of the elytral tips is not stated, but it differs from *biformis* in having the median fascia below the middle; in *biformis* it is exactly at the middle; in *muliebris* it is a little below the middle as it is in *nobilis*, but *muliebris* has a much smaller head and prothorax than in *biformis* and more slender antennæ, and the very peculiar elytral tips are probably not duplicated in *mormonus*; so I believe *mormonus* to be still another species and not identical with any here described.

Xylotrechus Chev.

This and the remaining genera of the above table differ from the preceding in having the abdominal process acute and the elytra without trace of the subsutural carina, thus indicating a distinct section or group of the Clytids; the body also is more slender and subcylindric as a rule. Removing *planifrons* Lec., as suggested by Leng, the genus is clearly limited and easily recognized by the bicarinate front. *Fuscus*, of Kirby, is by no means a synonym or variety of *undulatus* but is a distinct species, having a suffused pronotal tracery of pale hairs almost exactly like that of *nauticus*, much shorter elytra and a system of fine and very irregular elytral lines also much more closely resembling *nauticus* than *undulatus*; it differs from *nauticus* in the parallel, subevenly rounded sides of the prothorax; I have a pair in very good state of preservation

taken in Maine, by Mr. C. A. Frost. *Interruptus* is a subspecies or variety of *undulatus*, but *lunulatus* Kirby, I have not been able to identify. *Undulatus* represents a very common American type of the genus, including a number of species all distinctly characterized; as far as represented in my cabinet they may be known by the following tabular statement. The remarkable sexual difference in the sculpture of the head does not seem to have been noticed heretofore; in the male the sculpture is very minute, dense and dull, excepting in an abruptly defined basal band ascending at the sides along the inner margin of the eyes, this band being shining and coarsely punctate; in the female this structure is only traceable by coarser punctures at the base of the occiput than elsewhere, but the front is more pubescent. The males of *undulatus* seem to be far more abundant than the females, which is not the case apparently with the west coast forms here defined; the allies of *undulatus* are as follows:

- Prothorax inflated and strongly rounded at the sides, evidently wider than the base of the elytra, brownish-black, the legs dark red-brown, the antennæ piceous; head finely, strongly, rugosely punctate, more coarsely medially toward base and along the latter; antennæ but slightly overlapping the base of the elytra, the third joint not quite as long as the first; prothorax fully one-half wider than long, widest just behind the middle, sculptured and ornamented with narrow apical and basal dense pale pubescence as in *undulatus*; elytra similar but rather more elongate, the apices obliquely arcuato-truncate; pale spots as in *undulatus* though partially yellow and with the ante-apical fascia subentire, not broken into two spots; legs moderate; abdomen with numerous long erect hairs, the shorter white hairs denser along the segmental apices. Length (♀) 14.5 mm.; width 4.2 mm. Colorado (Boulder Co.). *inflaticollis* n. sp.
- Prothorax not inflated and always narrower than the elytral base, more broadly rounded at the sides, ornamented as in *undulatus*. 2
- 2—External angle at the elytral truncature very obtuse and blunt; form stouter than in *undulatus*. 3
- External angle sharply marked and not blunt, the truncature straight, oblique. 4
- 3—Color blackish-brown, black anteriorly, the legs and antennæ piceous-black, paler distally; head finely and densely but not deeply punctatopunctate, the converging frontal carinæ more feeble than in any other of the *undulatus* group, flatter and ill-defined; third antennal joint not quite as long as the first; prothorax two-fifths wider than long, parallel and almost evenly rounded at the sides, the fine confused sculpture closer and stronger than in *undulatus*; elytra nearly as in that species in form and ornamentation, the suture

more arcuately dehiscent at apex, the truncature oblique and straight but less well defined, the sutural angles being very obtuse and somewhat rounded; posterior elytral spots larger but separated by longitudinal rays nearly as in *interruptus*; abdomen narrowly annulate, the legs moderate. Length (♀) 14.0 mm.; width 4.7 mm. British Columbia (Aldermere),—Keen.....**columbianus** n. sp.

Color deep black throughout, the legs and antennæ feebly picescent distally; maculation throughout as in *undulatus* but more developed and pure white, the apical margin of the pronotum broader, denser sublaterally, giving the appearance of an inclosed spot; head and antennæ in form and sculpture nearly as in *undulatus* but with the third antennal joint shorter, not longer than the first; prothorax similar in form and sculpture but larger, just visibly narrower than the elytra, having near basal third a small spot of short sparse white pubescence, which seems never to appear in *undulatus*; elytra less elongate, more cuneiform, only about twice as long as wide, all the spots clearly separated, the apical truncature less oblique and somewhat arcuate; spots and annuli of the under surface pure white and very sharply defined; legs moderate. Length (♂) 13.3 mm.; width 4.2 mm. California (Siskiyou Co.)..**albonotatus** n. sp.

4—Third antennal joint scarcely as long as the first; elytra very rapidly narrowed from base to apex, strongly cuneiform, markings all yellow; head and prothorax throughout nearly as in *undulatus*, the sides of the latter rather more strongly rounded medially and correspondingly more sinuate near base and apex; elytra maculate as in *undulatus*, rather shorter, paler brown in color; legs and antennæ pale red-brown but almost similar; apical pale annuli of the abdomen more diffused, especially toward the sides. Length (♀) 12.5 mm.; width 4.0 mm. Idaho (Cœur d'Alene),—J. A. Leyden.

montanicus n. sp.

Third antennal joint much longer than the first in both sexes; maculation whiter. 5

5—Form more slender than the first three of the above species, the elytra but slightly narrowed from base to apex and much wider than the prothorax, which is very moderate in size, two-fifths wider than long, with the sides broadly rounded; color dark red-brown, the legs and antennæ rufescent; apical and basal pale pubescent margins of the prothorax always narrow, sharply defined, more or less interrupted at the middle; elytral spots disconnected in the ante-apical fascia, the ground uniform or sometimes slightly sprinkled with paler hairs, sometimes with longitudinal rays of sparse pale hairs in more than apical half, this being the typical form as figured but not described by Say and the typical form of *interruptus* as figured by Laporte and Gory; legs moderate, the hind femora extending barely behind the elytra in the male, with the hind tarsi compressed as usual but only of moderate length, the first joint only about one-half longer than the remainder. Length (♂) 10.0–13.5 mm.; width 3.0–4.0 mm. Region of the Great Lakes and in Indiana.

undulatus Say

Form, coloration and maculation almost exactly as in *undulatus*, the

elytra rather less elongate, the prothorax somewhat less transverse, only about a third wider than long; legs more slender and much longer, the hind femora extending well behind the elytra in the male and the hind tarsi longer and more slender, with the basal joint almost twice as long as the remainder, shorter in the female, the femora extending barely to the elytral tips. Length (♂, ♀) 11.5–12.0 mm.; width 3.5–3.6 mm. California (locality unrecorded).

longitarsis n. sp.

Of *undulatus* I have at present five examples, all males, and have not seen the female; these five males exhibit considerable inconstancy in the pubescence of the elytra as stated, but in no other respect, except that the two examples having no scattered hairs and no vestige of longitudinal rays, have on the whole, slightly narrower and more elongate elytra; as these longitudinal rays are not mentioned by Say in his description we can legitimately regard the unrayed and more slender form as *undulatus* and the rayed form, with slightly shorter elytra, as the variety *interruptus* of Laporte and Gory; further light gathered from larger series is needed however.

Of a form of *nautilus*, which I construe to be *gramineus* Hald., because of its slightly broader elytral markings, accompanied by more obvious pallid lines of the integument, there is in my cabinet a single female example from southern Oregon.* In this species the head in the male has two separated areas of minute, densely dull sculpture, which are wholly wanting in the female, and in the latter sex the pronotal granules are coarser and more transversely carinuliform than in the male; *nautilus* varies enormously in size as in some other species of this genus as well as *Neoclytus*.

In the *sagittatus* group there is a loosely and pallidly pubescent sutural line, accompanied for the most part by pallid integument, from the elytral base to about apical third, with two short transverse offsets, one near two-fifths, the other at about two-thirds from the base; the elytral truncature is limited externally by a distinct spine and the prothorax is generally a little longer than

* I have before me a single male labeled "Michigan," which is more parallel in form than *nautilus* or *gramineus*, but which has the same rather broad pallid lines of the integument as the latter; it is probably the male of *gramineus*, though I have seen no reference to so extended an easterly range of distribution. The densely dull cephalic patches of this male are triangular and more clearly separated anteriorly than in *nautilus*; so it may be that *gramineus* should be considered specifically different from the latter.

wide, bitruncate, with the sides feebly arcuate, becoming rather fuller behind the middle, the surface strongly granose and much more coarsely so in the female than in the male. The head is nearly as in *undulatus* in both sexes, minutely sculptured and dull in the male, excepting a narrow shining basal band, extending forward in a fine line bordering the eyes internally and coarsely punctate, almost uniformly and more coarsely punctato-rugose throughout in the female. It is a very clearly circumscribed group, containing several species and subspecies as follows:

Body more rhombiform, very convex, with the elytra tapering very rapidly from base to apex, dark red-brown in color throughout; head well developed, the frontal carinæ low and rather ill-defined, separated by much more than the distance between either and the supra-antennal carina, the vertex behind the line of the antennæ not carinulate medially; antennæ (♂) fully one-half as long as the body, the third joint distinctly longer than the first, the outer joints feebly canaliculate on their under surface nearly to the base; pronotum uniform in sculpture and vestiture, having numerous sharp transverse granules and short, sparse, inconspicuous and subdecumbent pale hairs, also a few that are longer and erect; scutellum less than twice as wide as long, arcuato-truncate at apex; elytra distinctly wider than the prothorax, slightly more than twice as long as wide, strongly, closely punctate, the punctures transversely confluent, the marginal pale and sparsely pubescent line with two small offsets opposite the offsets of the sutural line but not very well developed; under surface uniformly and sparsely punctulate, coarsely pilose; legs long, the femora notably stout, very sparsely punctate and pilose, scarcely more than attaining the elytral tips in the male. Length (♂) 17.5 mm.; width 4.9 mm. Florida.

sagittatus Germ.

A—Similar to *sagittatus* but smaller, more slender, the elytra less strongly tapering, relatively more elongate and with the punctures more clearly defined and less coalescent; head with the frontal carinæ fine and sharply defined, exactly trisecting the space between the supra-antennal carinæ; antennæ more slender and notably shorter, the third joint longer than the first, the canaliculation of the outer joints shorter and more apical; vertex with a fine shining carina extending almost to the base; elytra only slightly wider than the prothorax; scutellum more than twice as wide as long, circularly rounded; pronotum with smaller and closer transverse carinules and with more numerous erect bristling hairs; legs shorter, the femora much more slender, the posterior not attaining the elytral tips. Length (♂) 12.0 mm.; width 3.2 mm. Pennsylvania.....**pubescens** Hald.

Body more slender, much less rhombiform, the pale pubescence coarser and much longer, frequently sprinkled over the entire surface

- outside the sutural and marginal lines, which are disposed nearly as in the two preceding.....2
- 2—Form subcylindric, dark red-brown, feebly shining, the coarse pale hairs numerous throughout, giving a gray effect; head with the frontal carinæ feeble, uneven and confused, more widely separated than from the supra-antennal carinæ; vertex with numerous short stout pale hairs, feebly impressed on the median line near the base; antennæ (♂) less than one-half as long as the body, the third joint much shorter than in *sagittatus*, barely as long as the first, the canal-iculation of the outer joints apical; prothorax as wide as long, clothed not densely with coarse and decumbent and longer erect gray hairs; sculpture coarser than in *sagittatus* and consisting of transversely longer, irregular carinules and granules; scutellum as in *pubescens*; elytra but little wider than the prothorax, very feebly tapering, fully two and one-half times as long as wide, the briefly biramose sutural and marginal lines of pubescence better developed than in *sagittatus*, and, in addition, a sprinkling of pale hairs throughout and a small condensed point at the middle of each near the base; punctures strong, dense, transversely confluent and rugose; legs shorter than in *sagittatus*, the femora less stout, the posterior rather far from attaining the elytral tips. Length (♂) 15.5 mm.; width 4.0 mm. Wisconsin (Bayfield),—Wickham.....**cylindrus** n. sp.
- Form less parallel, the elytra more tapering and much wider than the prothorax, which is rather longer than wide, more parallel from behind the middle to the apex and with very large and well separated strong granules, which are but slightly transverse and separated by polished integument; color nearly black throughout, the pale hairs much less numerous than in *cylindrus*; head strongly punctato-rugose throughout, the front with three subparallel carinæ in a confused cluster, the median and anterior the largest; antennæ (♀) very short, barely extending to the base of the prothorax, the third joint scarcely as long as the first; vertex with very few short inconspicuous hairs; prothorax almost glabrous but with numerous coarse pale decumbent and erect hairs on the flanks; scutellum as in the preceding; elytra a little shorter than in the preceding, the punctures not so coarse but very much more densely confluent, the sutural and marginal biramose lines well developed, the offsets almost meeting just outside the median line of each elytron, the condensed point of the preceding larger and obliquely lineiform; scattered hairs elsewhere very few in number; legs short, the hind femora with more numerous punctures and hairs than in any of the preceding. Length (♀) 16.5 mm.; width 4.5 mm. New Mexico.

salebrosus n. sp.

Some of the characters detailed under *salebrosus*, such as the larger pronotal asperities and the more developed pubescent lines of the elytra, are in more or less great part sexual in nature, the sculpture of the vertex and the short antennæ wholly so, but the closer punctures of the hind femora are probably not sexual

and there are enough special features, generally asexual in other parts of the genus, such as the form of the prothorax, to show that the female type described really represents a species distinct from any of the others; they all seem to be rather rare and seldom taken in series. The general characters of the group are a mixture of those of the *undulatus* and *nauticus* groups, with some, such as thoracic form and elytral ornamentation, that are essentially peculiar.

The females of the *insignis* group resemble *Clytus*, as represented by *planifrons* for example, much more closely in form and ornamentation than they do any of the other types of the genus *Xylotrechus*; the males differ greatly from the females in being very pale red-brown in color, with more suffused vestiture and indistinct or partially obsolete fasciæ, which are so well developed in the female. So, although the species of this group are truly *Xylotrechus*, as shown by the peculiar sexual modifications of the head, consisting of two large, very finely sculptured triangular opaque patches on the vertex of the male, which are completely obsolete on the more coarsely sculptured vertex of the female, and, as shown by the frontal carinæ, they nevertheless constitute a remarkably distinct and aberrant group of the genus in the sexual diversity referred to above, which is analogous to that even more developed in the genus *Calloides*. The species of this group in my collection may be defined as follows:

- Elytra with the curved transverse fascia before the middle in the female equal and entire, mounting more narrowly along the suture to a point some distance behind the scutellum, sometimes altogether wanting and always greatly reduced in the male.....2
- Elytra as in the preceding, except that the fascia before the middle in the female ends just outside of the median line, the continuation indicated by a small elongate spot near the margin.....4
- 2—Elytral fasciæ in the female white in color and all rather narrow; frontal carinæ fused into a tumid oblong punctate glabrous spot; annuli of dense hairs at the apices of all the abdominal segments narrow and white; body black in color throughout, the legs and antennæ testaceous. Length (♀) 14.5 mm.; width 4.7 mm. Colorado.....**obliteratus** Lec.
- Elytral fasciæ in the female bright sulphur-yellow in color and much broader:.....3
- 3—Form more elongate than in the preceding, larger in size, the female black, with the elytra blackish-brown, the legs and antennæ rufous; frontal carinæ only feebly marked, the intermediate surface flat,

strongly punctate and glabrous; prothorax larger than in *obliteratus* and more tubulate at base, as wide as the elytra or very nearly, the apical and basal margins finely yellow, the apical band angularly emarginate and almost divided at the middle; sculpture very fine and densely punctato-rugulose throughout; elytra slightly more than twice as long as wide, the posterior half of the scutellum and adjoining lateral small spot, a broad oblique discal spot behind the base, a broad sinuate fascia as before described near basal two-fifths, a feebly oblique and entire narrower fascia near apical third and the apex, rather broadly, yellow; abdomen with the yellow annuli much wider than in *obliteratus*. Male rather more slender and cylindric, with a still larger and more medially tumid prothorax, pale red-brown in color throughout, the frontal tumidity similar, the prothorax wider than the elytra, less arcuate or nearly straight in median third at the sides and not at all tubulate at base, the surface still more finely sculptured and densely opaque, the pale apical margin very fine, the basal wanting, the vestiture consisting of minute, sparse and very inconspicuous hairs; elytra with only the oblique post-basal, post-median and apical spots and bands and these reduced; abdomen uniformly, closely pubescent, without condensed pale annuli. Length (♂, ♀) 15.0-16.0 mm.; width 4.4-5.0 mm. California (locality unrecorded).....*insignis* Lec.

Form nearly as in the preceding but a little smaller and notably more slender, the red-brown color slightly more obscure in the male, which has very much more suffused vestiture than in *insignis*, sometimes almost completely obliterating the spots and fasciæ; front and triangular opaque spots nearly similar; prothorax nearly similar in form and sculpture, even more tumid medially between the more foveiform depressions just before the middle near outer fourth, the short decumbent pubescence coarser, paler and closer; elytra much narrower and somewhat less convex than in *insignis*, with the same spots and fasciæ as in the female of that species though much reduced, the post-basal fascia but seldom wanting, the general vestiture more or less dense and yellow and not rather sparse, fulvous and less visible as it is in *insignis*; under surface wholly immaculate, densely clothed with yellowish-tawny pubescence. Length (♂) 14.0-16.0 mm.; width 4.0-4.6 mm. California (Hoopa Valley, Humboldt Co.).....*incongruens* n. sp.

4—Form throughout as in *insignis*, the female having nearly similar coloration, the elytra more deeply black; frontal carinæ fine but more sharply defined, the surface between them more concave; prothorax of similar form and vestiture, and likewise but very little wider than long, except that it has the apical yellow band, not angularly emarginate, but broadly and gently sinuate medially and the fine subvermicularly rugulose sculpture a little coarser medially; elytra but slightly wider than the prothorax, otherwise nearly as in *insignis*, except as above stated and in having the space between the post-median and apical yellow fasciæ less extended; apices similarly obliquely arcuato-truncate, with the angle very obtuse and narrowly

rounded; under surface, legs and antennæ nearly as in *insignis*. Length (♀) 16.7 mm.; width 5.0 mm. California (Los Angeles Co.).

diruptus n. sp.

Of *insignis* Lec., the two males and two females before me serve as a very good criterion for estimation of specific value in the other forms. I obtained four males of *incongruens* on a low tree on one occasion but could never find more of them and do not know the female; *diruptus* may be more properly a subspecies of *insignis* than a distinct species.

Neoclytus Thoms.

This genus is not quite so well defined as the preceding, but may nearly always be clearly recognized by the longitudinal areas or lines of transverse carinules on the pronotum and the shorter, steeper and unmodified front, without carinæ either medial or supra-antennal; this serves to distinguish it very well from *Xylotrechus* but is not always so decisive in regard to *Clytanthus*. It includes two moderately definite groups, one, represented by such species as *luscus*, *devastator* and *scutellaris*, having long terminal spines on the femora, and the other, including such forms as *conjunctus*, *erythrocephalus* and *muricatus*, which either have the terminal spines very short or altogether wanting as in *Xylotrechus*. The two following species have the femora as in the second of these groups:

Neoclytus fulguratus n. sp. (Thomson i. litt.).—Form and general structure nearly as in *longipes* but stouter and with fewer and shorter bristling erect thoracic hairs, dark brownish-piceous in color throughout, the elytra a little less dark; condensed areas pure white; antennæ (♂) slender, filiform, barely half as long as the body, the second joint about half as long as the third, the latter slightly longer than the fourth and very much shorter than the first; prothorax about a fourth longer than wide, parallel, with evenly and moderately arcuate sides throughout, the apex slightly arcuate, subequal to the base; surface densely and strongly punctato-rugulose and with three tolerably regular series of well spaced transverse carinules, the vestiture sparse and even, excepting a small condensed point near each side at the middle of the length, more distinct than in *longipes*; elytra barely wider than the prothorax and twice as long, feebly tapering, the apices obliquely truncate, with obtuse blunt angles; surface with scattered coarse white decumbent hairs, denser indefinitely at base and along the suture to the middle, this vitta having a short broad offset near basal third and, just behind this, an entire transverse fascia, which is strongly and anteriorly angulate sub-medially and thence more posteriorly oblique to the sides; also, at apical



fifth, an entire narrow fascia, which is anteriorly angulate with that on the other elytron at the suture, the apices not densely pubescent; legs slender, the posterior long, with the femora extending well behind the elytra. Length (♂) 9.8 mm.; width 2.6 mm. Texas.

This species is frequently confounded with the northern *longipes* of Kirby, but differs in its more laterally rounded and less slender, more coarsely sculptured and more definitely triserially carinate prothorax and decidedly in the disposition of the elytral fasciæ; in *longipes* the base is loosely pubescent, the suture has near basal third a small rhombus and near the sides a small spot, wholly absent in *fulguratus*, and, just behind the middle and very much posterior to the zig-zag fascia of the latter, a transverse fascia which is much less angulate on each elytron; the posterior fascia is nearly as in *fulguratus* but rather more oblique anteriorly to the suture, finer and not extending to the sides.

***Neoclytus infans* n. sp.**—Form very slender, cylindric, black throughout and dull, the legs and antennæ piceo-testaceous; antennæ (♂) very slender, slightly thickened apically, nearly three-fifths as long as the body, the second joint half as long as the third, which is a little shorter than the first, the latter unusually slender; prothorax distinctly elongate, arcuate at apex, with the sides parallel, evenly and distinctly arcuate throughout; surface with only extremely small and scarcely observable hairs, densely, finely punctate, with a broad lateral area having scattered granules and a median line of transverse carinules; scutellum small, nearly nude; elytra as wide as the middle of the prothorax, two and one-half times as long, perfectly parallel and straight at the sides, rounding at apex to the distinct external angle of the oblique truncature, having each, of dense white pubescence, a narrow juxta-sutural line in fully basal fourth, curving outwardly briefly and more diffusedly at base, a small sublateral point at basal third, an oblique line just behind the middle and not attaining side or suture and another oblique line near the apex, attaining the suture but not quite the sides; under surface sparsely punctulate and pubescent, with white condensation on the mes-epimera, posterior half of the met-episterna and lateral part of the apices of the first two ventral segments; legs very slender, the posterior femora extending distinctly behind the elytral tips. Length (♂) 6.8 mm.; width 1.7 mm. California (Siskiyou Co.),—Koebele.

Belongs near *muricatus* but differs in the more slender and less claviform basal joint of the antennæ, relatively longer second joint, more elongate and more medially carinulose prothorax, more slender legs and very much longer and more slender basal joint of the hind tarsi.

The following may be considered a subspecies or variety of *luscus*:

Neoclytus strictulus n. subsp.—General characters and ornamentation precisely as in *luscus* but narrower and more cylindric, the prothorax without trace of the two large nubilously red areas of that species and having the sculpture more uniform, the very short transverse carinules of the tumid median line less evident; antennæ slightly more slender. Length (♀) 9.0 mm.; width 2.6 mm. A single example, rather smaller than any example of typical *luscus* at hand, found unlabeled in the Levette collection.

Distinguishable from *luscus* principally by the narrower form and thoracic coloration.

The following is a subspecies of *conjunctus*, the latter occurring in the middle coast regions:

Neoclytus occiduus n. subsp.—Similar to *conjunctus* but narrower, the elytra much less tapering from base to apex, the elytral ornamentation precisely similar; antennæ (♂) a little shorter, much more slender, especially the basal joint which is only about two-thirds as thick; prothorax less evenly rounded at the sides, more swollen just behind the middle, more evenly pubescent, with the sublateral ridge almost obsolete; legs shorter and more slender, the hind thighs (♂) not quite extending to the elytral tips. Length (♂, ♀) 9.0–12.0 mm.; width 2.4–3.1 mm. Labeled simply "California" in the Levette collection.

The four examples seem to indicate a moderately definite subsidiary form. The following is apparently a species distinct from *conjunctus*:

Neoclytus tularensis n. sp.—Similar to *conjunctus* but a little narrower, more convex and more elongate, the elytral maculation similar but broader and with the submedian lines diverging from the suture filled solidly with white pubescence, having its anterior margin transverse across the suture; antennæ (♂) similar but a little shorter; prothorax more transverse, more strongly rounded at the sides and more arcuate at apex, the brown hairs in the large concavity at each side of the sublateral ridge not dense but long, coarser and much sparser; scutellum similarly nearly nude; elytra distinctly tapering, barely as wide as the prothorax, each narrowly rounded at tip; legs similar, the hind femora extending a little behind the elytra; abdomen evenly banded. Length (♂) 12.8 mm.; width 3.4 mm. California (Kaweah).—Hopping.

In the male of *conjunctus* the dense pubescence seems to obliterate completely the first abdominal suture, but in *tularensis* all the sutures are distinctly indicated by the arrangement of the four broad pubescent bands.

Clytanthus Thoms.

In the European fauna this is the largest genus of the Clytini, but in America it is very poorly developed, only two species being

known at present, *uricola* Oliv., and the new species described below; *albofasciatus* is here made the type of a separate genus. *Clytanthus* resembles *Neoclytus* closely, differing principally in the even and fine dense sculpture of the pronotum, without isolated asperities or carinules, and in the dilated anterior tarsi of the males. There are, however, some other peculiar crural characters, present at least in our two species, the middle femora being notably stout in the male and the middle tibiae bent and thickened apically, with the apex lobed; these characters are also somewhat evident in the female as well, but whether they are in any way general among the numerous palæarctic species I am not able to state.

Clytanthus catulus n. sp.—Subparallel, the elytra almost parallel and very much less tapering than in *uricola*, black, the elytra feebly picescent, the legs pale flavo-testaceous, the femora black, the middle and posterior pale basally; antennae moderately slender, slightly thicker distally, a little more than half as long as the body, pale flavate, the basal joint dusky and the outer four nearly black, the seventh transitional in color; second joint two-fifths as long as the third, which is longer than the mutually equal first or fourth; prothorax fully as long as wide, wider at the broadly arcuate apex than at base, the sides in about apical half very feebly converging, rounding medially and thence straighter and converging to the basal margin; surface convex, very densely, finely sculptured and dull, scarcely at all pubescent, except the narrow yellow apical and basal margins; scutellum transverse, rounded, densely clothed with yellow pubescence; elytra wider than the prothorax and two and nearly one-half times as long, obliquely truncate at the apices, the external angle sharp but simple, with a transverse discal spot of dense yellowish pubescence near the base, a straight subsutural line from basal sixth to third, a medial transversely oval spot just before the middle, another smaller, more anterior and near the side and, near apical fourth, an oblique fascia from near the side to the suture; under surface with spots and ventral annuli nearly as in *uricola*. Length (♂) 8.0 mm.; width 2.2 mm. Wisconsin (Bayfield),—Wickham.

Differs from *uricola* in its smaller size, rather less elongate and more slender legs, and very greatly in antennal structure, the basal joint being shorter and the outer joints shorter and more compactly joined, being more parallel and less narrowed basally or less oval; it also differs in the disposition of the anterior elytral spots and in the position of the ante-apical fascia, which in *uricola* is but little more than three-fifths from the base and therefore much more distant from the apex than in *catulus*. The female in *uricola* seems to be very much rarer as well as smaller than the male.

Clytoleptus n. gen.

This genus differs from *Clytanthus* in the slender, subparallel and more depressed form of the body, in the two subbasal pronotal swellings, which are however obsolescent in the female and in the long, very slender and filiform antennæ; it also differs, so far as our fauna is concerned, in the unmodified legs and anterior tarsi of the male and in the narrower met-episterna. The only forms at present in my cabinet are the following:

Clytoleptus gracilicornis n. sp.—Slender, parallel, very moderately convex, dull, the elytra somewhat shining, piceous-black, the entire elytra before the post-medial fascia, the prosternal coxal region and entire sterna of the hind body pale testaceous, the legs and antennæ infusate, the femora throughout testaceous; antennæ (♂) about as long as the body, very slender, not incrassate distally, the second joint two-fifths as long as the third, which is much longer than the first or fourth; prothorax longer than wide, parallel, with evenly and broadly rounded sides and feebly arcuate apex; surface with very short, fine, sparse and indistinct decumbent hairs and very finely, densely, confusedly punctate, a little more strongly and granularly on the subbasal swellings; scutellum pale, feebly pubescent; elytra as wide as the prothorax and between two and three times as long, with a very fine line of condensed white hairs from outer and basal third, curving rapidly forward to the suture just behind the scutellum, and another a little wider from the side at posterior third anteriorly and anteriorly arcuate to the suture just behind the middle, the apex with loose and longer white hairs; middle and hind legs (♂) more equal than in *Clytanthus* and both very much longer than the anterior, the middle femora but slightly clavate, the tibiæ slender and simple, the basal joint of the hind tarsi about a third longer than the remainder. Length (♂, ♀) 7.0–7.7 mm.; width 1.75–1.9 mm. Indiana.

The hind femora of the male are but minutely bispiculate at tip and extend slightly behind the elytra; in the female the legs gradually increase in length antero-posteriorly and the antennæ are three-fourths as long as the body. It differs from *albofasciatus* Lap.-Gory, in the partially pale upper surface, but principally in the form of the post-median elytral fascia, which in that species broadens greatly toward the suture, so that its hind margin is almost transverse.

Clytoleptus tristis n. sp.—Body shorter and stouter than in the preceding and very deep black throughout, the tarsi piceo-rufous; head somewhat shining, finely and closely punctate; antennæ (♀) much less slender than in *gracilicornis*, deep black, gradually picescent, very feebly tapering and subfiliform distally, clothed with minute ashy hairs, a fringe of longer hairs beneath basally, four-fifths as long as the body, the second

joint nearly twice as long as wide and almost half as long as the third, which is a little longer than the fourth but very much shorter than the fifth, the outer joints still long and slender; prothorax as in the preceding though not uniformly and strongly puncto-reticulate, but more finely, densely puncto-rugulose medially, rather more elongate; scutellum shorter and broader; elytra shorter, but little wider than the prothorax and rather less than twice as long, the suturally ascending white streak from near basal third nearly similar, but with the white fascia behind the middle straight and only feebly, anteriorly oblique from near the sides to near the suture and composed of separated white hairs, the apices similarly obliquely truncate and loosely cinereo-pubescent, the sutural angle broadly rounded, the external prominent; legs stouter but even longer, the minute femoral punctures mingled with others less minute. Length (♂) 8.4 mm.; width 2.2 mm. Pennsylvania (Lemoynes),—H. B. Kirk. Bred from grape.

This species is notably different from *gracilicornis* in its longer and stouter antennæ and legs, very black coloration, rugulose median sculpture of the pronotum and in having the post-median white fascia of the elytra less oblique and not evenly arcuate but straight.

Clytus Laich.

Assuming as types of this genus the American *marginicollis* and *planifrons*, the body is stouter, more convex and more cylindric than in *Clytanthus*, the middle legs unmodified in the male and the met-episterna a little wider; the front, antennæ and very approximate anterior coxæ are almost similar. Besides *planifrons* Lec., and *marginicollis* Lap.-Gory, we have a third, rather closely allied to *marginicollis* definable as follows:

Clytus carolinensis n. sp.—Form and ornamentation as in *marginicollis* but black throughout above, except the extreme basal margin of the elytra, which is pale; legs and antennæ pale testaceous, the latter gradually blackish distally; head and pronotum clothed sparsely with long and very fine, perfectly erect hairs, the elytra with short hairs, longer and bristling basally at the sides; head strongly, closely punctate before, more opaque and more coarsely, very shallowly reticulate behind, the line of the antennæ, the latter short, incrassate distally, more widely separated than in *marginicollis* but otherwise nearly similar; prothorax throughout nearly as in that species, the dense sculpture rather shallower; scutellum and elytra nearly similar throughout; under surface and legs nearly similar but with the scattered hairs longer and more bristling. Length 9.8 mm.; width 2.8 mm. North Carolina (Southern Pines),—Manee.

Differs from *marginicollis* in its blacker elytra, pale only at the basal margin, in the shallowly reticulate and not deeply punctate

posterior part of the head and greater part of the pronotum, and more widely separated antennæ, but especially in the very different vestiture of the head and prothorax, which parts in that species are sparsely clothed with irregularly decumbent or less erect and very coarse hairs, which are much paler in color.

Clytopsis n. gen.

The type of this genus is a species which I have had for a long time in my collection under the name *Clytus dimidiaticornis* Chev.; but, on comparing it more closely with the described characters of that species, there seems to be no doubt of its distinctness; it differs from *Clytus* in the much more prominent transverse frontal line between the antennæ and the consequently much steeper anterior part, which is perpendicular; it also differs in the broadly truncate basal margin of the eyes, stouter legs, relatively much less developed head and prothorax and in the system of elytral ornamentation, but agrees very well otherwise. The type may be described as follows:

***Clytopsis nimbata** n. sp.—Stout, only moderately convex, deep black and opaque, the elytra feebly shining; legs pale ferruginous, the femora broadly and feebly fusco-annulate near the apex; head with three bands of yellow pubescence; antennæ rather thick, two-thirds as long as the body, pale, gradually thicker, more compact and blackish-brown distally, the color transitional through the sixth and seventh joints, the basal joint obconic and as long as the next two, the second strongly obconic and as long as wide; prothorax nearly one-half wider than long, broadly rounded at the sides, narrowed and subtubulate at base, very finely, densely, confusedly punctate and evenly convex throughout, with sparse erect fuscous hairs and bright yellow apical and basal margins; scutellum large, transversely rounded, densely yellow-pubescent; elytra very much wider than the prothorax, slightly tapering, each with some longer looser yellow hairs on the basal slope and a transverse, somewhat anteriorly oblique yellow line near the base, not attaining the side or the suture near the scutellum, a transverse, posteriorly and feebly arcuate fascia a little before two-fifths, from the side bending rapidly forward internally to the suture slightly behind the scutellum, another, finer, from the side slightly behind the middle, feebly oblique and straight, then near the suture abruptly and anteriorly extended to the suture at basal third, another, broader and more transverse, just beyond two-thirds and finally an apical transverse solid spot, the apices narrowly obliquely truncate, with the angle rounded; under surface clothed closely almost throughout with rather coarse, decumbent, more whitish-yellow pubescence. Length 11.0–15.0 mm.; width 3.4–5.0 mm. Mexico (Guerrero).

This species differs from *dimidiaticornis*, so far as can be deduced

from the description, in the absence of what could be termed "long poils blond" and in the somewhat longer antennæ, which are not sharply bipartite in color as described by Chevrolat; the subbasal discal fascia does not unite at the margin with the third, and, finally, I cannot place the "point sutural jaune de chaque côté, plus rapproché de la deuxième que de la troisième bande." The solid apical yellow spot in *nimbata* is sometimes resolved into two narrow fasciæ. *Dimidiaticornis* is described from Oaxaca and is a slightly larger species than *nimbata*.

Paraclytus n. gen.

The species described by LeConte under the name *Clytus lanifer* (Sm. Misc. Coll., 264, 1873, p. 198) is isolated in all its features of structure and ornamentation, and cannot be closely associated with either of the two preceding genera, differing in the directions noted in the table given above. It is a local development, confined so far as known to California and the adjacent parts of Arizona. There seem to be three species as follows:

Antennæ (♂) slightly more than half as long as the body, black, flavo-pubescent; prothorax and base and suture of the elytra clothed with long hairs, the former slightly longer than wide, the base constricted, the sides subangularly rounded, sinuate posteriorly, densely and coarsely punctate, with a short dorsal line smooth; elytra with the suture, subbasal fascia, another transverse at the middle and a third oblique and ante-apical, flavate; scutellum densely flavo-pubescent; tibiæ and tarsi ferruginous. Length 14.0 mm. California (Owen's Valley).....**lanifer** Lec.

Antennæ (♂) two-thirds to nearly four-fifths as long as the body; prothorax seminude toward base, the smooth ragged dorsal line only present basally; size smaller though varying greatly.....2

2—Rather stout and convex, shining, black, the elytral suture, largely expanded basally and ante-apically and not attaining the apex, and an entire transverse slightly ante-median fascia, sometimes interrupted on each elytron, pale testaceous, the ante-basal parts of the prothorax and the sutural pale regions densely clothed with long flavate hairs, the transverse fascia nude; head more sparsely clothed with rather long pale hairs; antennæ (♂) infusate, black basally, not very slender, slightly thickened basally, gradually tapering distally, fully three-fourths as long as the body, the third joint longer than the first and one-half longer than the fourth, the basal joint notably stout, or (♀) rather more than half as long as the body, not tapering but flattened and more serrate distally, the joints similarly proportioned basally, except that the third is barely as long as the first; prothorax not quite as long as wide, truncate at apex and

base, similar in outline to the preceding, very coarsely and confluent punctate, the narrow interspaces polished; scutellum indistinct because of the dense vestiture but moderate and subequilatero-triangular; elytra much wider than the prothorax, about twice as long as wide, very feebly tapering, evenly rounding at apex to the suture without trace of truncature, the sutural angles rounded; surface shining, sparsely and very minutely punctulate; legs rather short and thick, dark ferruginous, the femora black, clavate distally, the posterior feebly, the anterior and middle tarsi broad, slightly broader in the male; under surface closely and uniformly clothed with short yellowish hairs; anterior coxæ well separated; fifth ventral very short, broadly sinuate (♂), or a little longer than fourth and rounded (♀). Length (♂, ♀) 8.8–13.0 mm.; width 2.7–4.0 mm. California (San Diego).....**brevitarsis** n. sp.

Rather less stout and more elongate, similar to the preceding in structure, coloration, sculpture and vestiture, except that the antennæ (♂) are about two-thirds as long as the body, more thickened basally and relatively more tapering distally, with the third joint but just visibly longer than the first, which is more evenly obconic and not abruptly narrowed basally, the prothorax still more evidently shorter than wide and with the close uneven punctures very much less coarse, the elytra more elongate, with the basal expansion of the sutural pale vitta more extended laterally nearly to the side margins and with the nude ante-median transverse fascia more anteriorly arcuate on each elytron, the apices not evenly rounding to the sutural angles but narrowly sinuato-truncate, with the sutural angle rather acutely prominent; legs nearly similar, the under surface very densely and uniformly clothed throughout with pale yellow decumbent and semi-erect coarse hairs. Length (♂) 12.0 mm.; width 3.65 mm. California (Siskiyou Co.).....**crucialis** n. sp.

The difference between *crucialis* and *brevitarsis* in pronotal sculpture and conformation of the elytral apices is remarkable and apparently decisive.

Microclytus Hald.

The discovery of additional material shows that *Cyrtophorus* is monotypic and represented only by the type, *verrucosus* Oliv. *Insinuans* will have to be placed in *Microclytus*, where its rugosely punctate pronotum and long antennæ, with relatively shorter second joint, isolates it thoroughly from *gazellulus* Hald., or *gibbulus* Lec.; that it is the male of *gazellulus*, as stated by Dr. Hamilton, is altogether impossible. The following is still another species:

Microclytus frosti n. sp.—More slender and convex than *gazellulus* and differing in its longer antennæ and vestiture of the elytral apex; body slender, somewhat shining, the antennæ (♂) extending to apical third of the elytra, slender, the second joint less than two-fifths as long

as the third, the latter extremely minutely spinulate at apex; prothorax slightly elongate, narrowed and feebly constricted at base, narrower than in *gazellulus*, very even in convexity and with a fine even strong reticulation of fine raised lines; elytra as in *gazellulus*, except that there is a more distinctly marked loosely pubescent band at a greater distance from the apex. Length (♂) 5.6 mm.; width 1.35 mm. Maine (Monmouth),—C. A. Frost.

Of *gazellulus* I have two forms, one smaller, from Illinois, and the other even larger than *insinuans*, taken by Schmitt in Pennsylvania; there seems to be very little sexual difference, except in the less basally narrowed prothorax of the assumed male and the slightly longer antennæ.

Agallissus Dalm.

The following species is evidently allied to the Honduran *quadrimaculatus* White:

Agallissus floridanus n. sp.—Rather stout, shining throughout and deep black, without trace of metallic lustre, the under surface, legs and antennæ black; elytra each with a transverse red spot at two-fifths and another just before apical fourth, both extending from the lateral margin to within inner third; head coarsely, closely punctate, longitudinally canaliculate between the antennæ, the latter (♀) stout, a little less than half as long as the body; prothorax nearly as long as wide, much wider than the head, parallel, the sides broadly arcuate, the apex very briefly, the base much more extendedly, tubulate; surface convex, rather flattened medially, very coarsely, closely, somewhat unevenly and subconfluently punctate throughout, the interspaces polished; scutellum tumid, sunken, wider than long; elytra much wider than the prothorax and more than three times as long, parallel and nearly straight at the sides, becoming somewhat laterally prominent at the tumid humeri, broadly rounding posteriorly to the narrowly and transversely arcuate apices, the surface flattened suturally, becoming declivous toward the scutellum, polished, very coarsely, closely and perforately but not contiguously cribrate throughout, each with two subprominent smooth discal lines attaining apical fourth, the punctures on the gradual apical slope less coarse; abdomen polished, with fine and sparse punctures; legs short; metepisterna wide, obliquely narrowed posteriorly, the elytral sinus near the base deep. Length 14.8 mm.; width 4.4 mm. Florida (Palm Beach).

Differs from *quadrimaculatus* in having the short erect hairs everywhere fuscous, very sparse and scarcely obvious, unless looked for, and not denser near the bases of the abdominal segments, also in the total absense of metallic reflection on the prothorax or elytra.

The genus *Agallissus* can readily be conceived to be nothing more than an aberrant *Clytid*.

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